Index Number

THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

Vol. 35, No. 12 | 540 N. Michigan Ave., Chicago, Ill. | August, 1936

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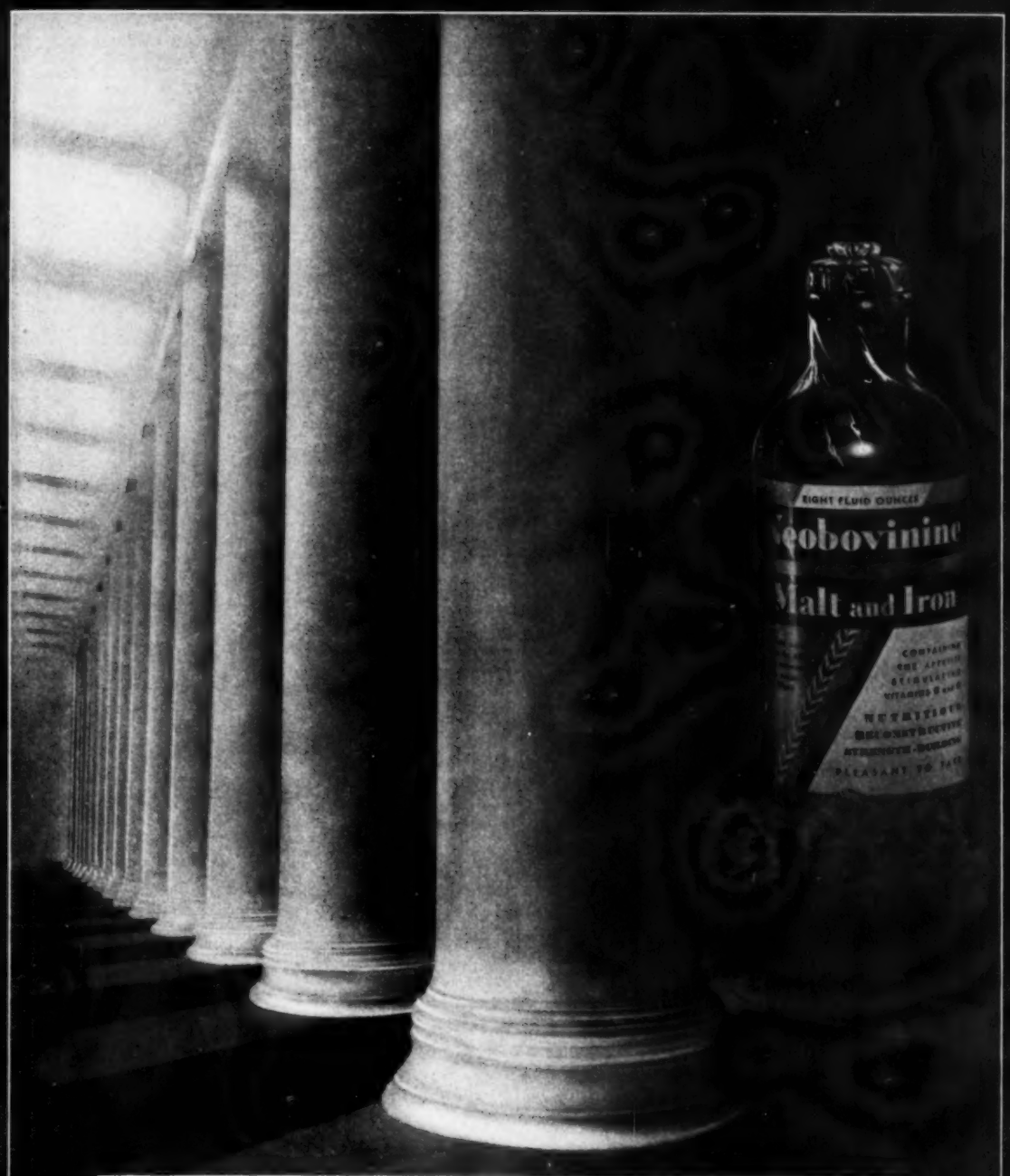

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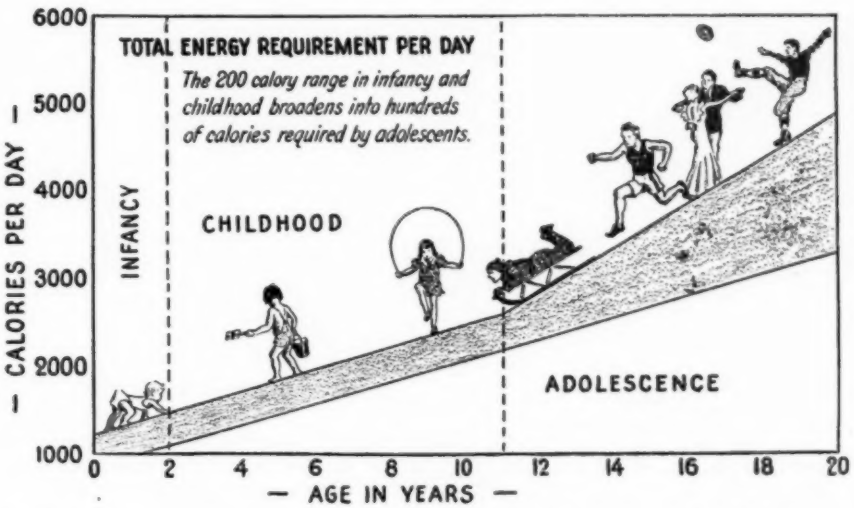

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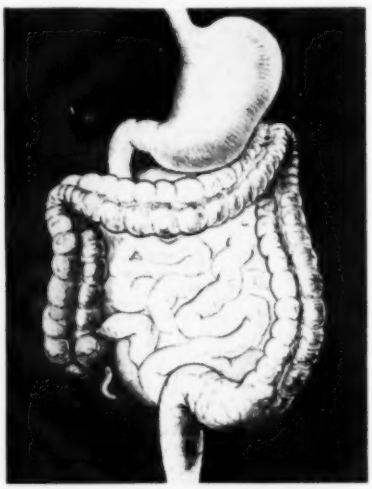

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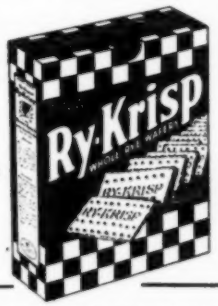

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VITAMINS IN CANNED FOODS

II. VITAMIN D

• One of the most interesting chapters in the history of the science of nutrition is that relating to vitamin D. It is a record of steady advances in our knowledge concerning the vitamin. Starting with the work of Huldschinsky in 1919 on the ultraviolet irradiation of rachitic children; passing to the classical discovery in 1924 by Steenbock (1) and by Hess (2) that irradiated foods may acquire antirachitic potency; and extending through the profound studies of Windaus (3) and other investigators, on the constitution of the pure vitamin D obtained by ultraviolet irradiation of ergosterol, the story of vitamin D is a story of steady, scientific progress.

As a result of these basic contributions, there are available today a number of excellent standardized carriers of vitamin D. Viosterol, and the fish liver oils, and their concentrates, are readily available for use in the campaign against rickets whose prevalence, especially among infants in large urban centers, still remains high. In addition to these vitamin D carriers, the vitamin D fortified or irradiated foods have appeared within recent years.

It has become increasingly evident that there are a number of compounds which may promote calcification in the various animal species. It is further evident that these compounds vary in their physiologic efficiency with various animal species, or that they are "species specific". A number of forms of vitamin D have been postulated (4) and much research in the vitamin D field has been directed toward their isolation and identification.

In general, natural foods have never been regarded as important sources of vitamin D. The commonest food articles show extremely low antirachitic potencies when measured by conventional methods. However, recent evidence has been offered that the contribution of vitamin D made by a varied diet of canned foods may be more significant than has heretofore been supposed (5). While common foods admittedly cannot supply the high demands of infancy and childhood or other phases of the life cycle, for vitamin D, it would appear that they may supply significant amounts of the vitamin to the diet, especially in the case of the adult human, concerning whose quantitative vitamin D requirement comparatively little is known.

Biological research has shown that canned marine products such as salmon, shrimp, and oysters (6) make a small but definite contribution of the antirachitic factor to the diet. We desire to direct the attention of our readers to these interesting facts about canned foods in general, and these canned marine products in particular.

AMERICAN CAN COMPANY
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(1) 1924. J. Biol. Chem. *61*, 405
(2) 1924. J. Biol. Chem. *62*, 301
(3) 1932. Ann. *494*, 226
(4) 1935. Physiological Reviews *15*, 1-97
(5) 1934. Ind. Eng. Chem. *26*, 758
(6) a. 1935. J. Home Econ. *27*, 656
b. 1933. Science, *78*, 368
c. 1926. Wis. Agr. Expt. Sta. Bul. *388*, 124

This is the fifteenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.

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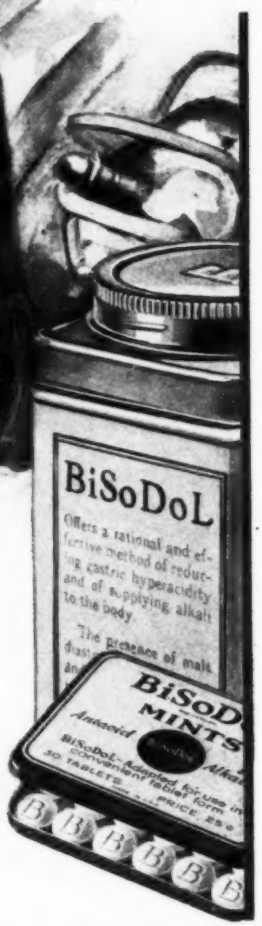
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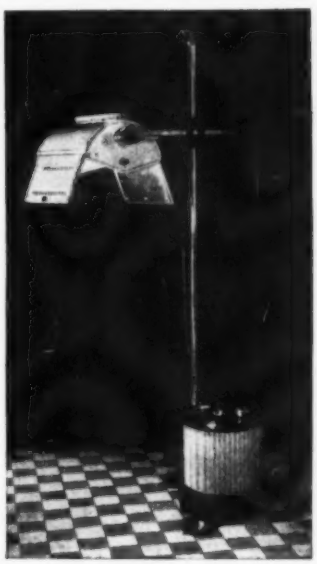

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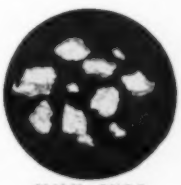

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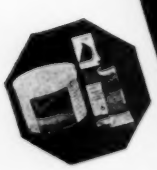

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President's Address*

THOMAS R. THORBURN, D.O.
New York City

I have been interested in reading the Presidential addresses given some twenty to twenty-five years ago, and noting that the problems presented at that time resemble very closely those which we have to consider today. It used to be customary for the President in his address to cover all phases of osteopathic activity during his term of office. Today that is unnecessary, because the heads of the departments, bureaus, and committees, which go so much more deeply into the various subjects, give their individual reports at the time of our national convention. Realizing this, I shall not go into detail in discussing such subjects as osteopathic education, legislation, our institutions and our future. I would urge that every member of the American Osteopathic Association read very carefully the reports submitted by the department, bureau, and committee chairmen. Only by so doing can an appreciation be gained of the volume of work accomplished and its effectiveness.

If I may again compare the present with the past, I should like to read a paragraph from a letter written by President James L. Holloway, on September 11, 1911, to Dr. Charles E. Fleck of New York City: "A distinctive, strong educational program is essential to our life. Nothing would please our opponents more than for us to drift with the tide, imbibing more and more their methods of teaching, and viewing diseases more and more from their standpoint. Whenever we inaugurate a distinctive osteopathic educational program we shall not only insure our own existence, but we shall exert such an influence that legislative opposition will be overcome and our system placed upon an impregnable basis."

While we have made considerable progress during the past twenty-five years in osteopathic education, the coming twenty-five years will doubtless have a greater influence upon the future of osteopathy. The broadening sphere of osteopathic practice has caused many osteopathic physicians to become interested in surgery and specialty practice to the exclusion of manipulative therapy. I am not suggesting that those who have followed that course do not advise osteopathic manipulative treatment for their patients, but the very fact that they are carrying on a specialized practice as mentioned takes from them the opportunity to personally give manipulative treatment. Therefore, each time one of our profession enters a specialty to the exclusion of osteopathic manipulative therapy, we have lost an osteopathic technician.

I am cognizant of the invaluable aid which our osteopathic surgeons and specialists give to our profession. I realize that in practicing their specialty they continue to keep in mind those conservative principles of osteopathic practice and the osteopathic attitude toward diseases in general. Nevertheless, my plea would be for more general practitioners. The only thing which the osteopathic profession has, which other systems of therapeutics have not, is osteopathic manipulative therapy and the philosophy which is behind it. It is our stock in trade. I cannot emphasize this too strongly. I am not a reactionary—I hope that I may even be considered a progressive—yet I do not wish to see the fundamental principles of the practice of osteopathy sacrificed to so-called broader fields of practice. I believe that the osteopathic physician should have the privilege of giving to his patient any form of treatment which has been scientifically proved to be of value.

I believe that we should get away from the idea which we hear so frequently expressed that we are entitled to our certain therapeutic agencies; I believe that we should change our point of view and say that our patient is entitled to receive that form of treatment which will be most beneficial to him.

During the fifty years of osteopathic life, science has contributed much to the alleviation of human suffering. Hundreds of thousands of grateful patients throughout the world are indebted to the founder of osteopathy and yet many of them do not even know his name. We have been negligent in informing the public of the help which it is possible for them to obtain through osteopathic treatment. We have bent backward in an endeavor to refrain from any procedure which might appear to be advertising, and yet we have not substituted a campaign of public relations in order to tell the public and guide them to a source of health.

*Delivered before the General Sessions of the Fortieth A.O.A. Convention, New York, 1936.

For ages there has been an idea prevalent among lay people that a woman who has borne children is expected to have backache. It has been looked upon as a natural consequence of childbirth. How frequently we heard it said: "Well, Mrs. ———— has had three or four children; she must expect to have backache." Not until Dr. Andrew Taylor Still called to the attention of anatomists the fact that the sacroiliac joint is a moveable one, and that it is frequently subluxated during childbirth, was a satisfactory treatment for this form of lower back pain given to the world. When we consider the thousands who are suffering from lower back injuries because of industrial accidents and the thousands suffering because of accidents occurring in the different sports, we can see that we owe a very definite obligation to these individuals and that the osteopathic message of hope should be given to them at the earliest possible moment. Only through well-organized public relations work can we accomplish such an end. We frequently hear it said that the best way to tell the world is by efficient work on the part of individual osteopathic physicians. While it is true that we must have skilled osteopathic hands which will correct the anatomical faults, it is also true that so long as we do not inform the public, many people will pass the door of an efficient osteopathic physician, not even knowing what osteopathy is.

May I call your attention to the fact that the broad scope of osteopathy is not a new development? May I remind you how it was outlined in the Articles of Incorporation of the American School of Osteopathy? This was the charter of the first incorporated school of osteopathy, and it stated that the school was established for the purpose of improving upon our present methods of surgery and midwifery and for the development of the treatment of diseases in general.

The public has little idea that osteopathy was founded with such a broad point of view in mind. We must let them know that osteopathy is not limited in its scope of practice, as is generally thought. We have not accepted the challenge to go forth and inform the public. We have been waiting for some good Samaritan to appear who would furnish the wherewithal to tell the world the osteopathic story. This policy of inactivity has been deplorable. If the osteopathic physicians would put back into their profession a small percentage of their earnings, the public could be informed within a very few years. If a carefully-planned public relations campaign had been inaugurated twenty-five years ago, I believe that osteopathy would enjoy a position of prominence far greater than it holds today. I believe that most of us have heard of the public relations work which has been carried on in New York City during the past five years. This work has been paid for by osteopathic physicians of New York and vicinity. I do not believe that we have a right to go to the public for funds unless we, ourselves, are willing to contribute. The public relations idea is spreading rapidly throughout the country—practically every organization, either professional or business, is being aided by some person or persons trained in the work of public relations. Osteopathic organizations in many of our cities are inaugurating or considering a campaign of public relations. As a national organization, it is now time for us to start this constructive work. It must involve budgeting on the part of the profession for the carrying on of public relations work until such a time as the public will become sufficiently interested in our profession and our institutions to contribute to the support of this project.

In order that there may not be a duplication of effort and that the osteopathic organizations, colleges, hospitals and the A. O. A. may work in complete accord, a committee is studying the problem at the present time. It must be remembered that no committee can function successfully without the complete backing of the profession as a whole.

While the work of public relations is one which will build for the future, it will have an effect on practically every member of our profession a very short time after it has been inaugurated. The contacting of newspaper and magazine editors, writers, persons of prominence in lay and professional organizations will obtain results which will be nation-wide. We have seen this in our work in New York City.

All of the above is but a step in more efficiently organizing the osteopathic profession. It is regrettable that our colleges have not had well-organized alumni associations. Our colleges deserve the support of their graduates, not merely moral support or the sending of students, but also financial support. The alumni of the Philadelphia College of Osteopathy have been operating to the benefit of that institution. A plan which has now been inaugurated by the Philadelphia College of Osteopathy, involving annual giving for the support of the college and hospital, is a commendable one and will result in an enlarged institution with better equipment and a greater opportunity to serve the profession. This plan may well be emulated by our other institutions who do not feel financially able to develop further at the present time. The support of our osteopathic institutions and our public relations work must go hand in hand. Then after we, as a profession, have taken the interest and made the sacrifice which is required, I have confidence that it will not be difficult for us to enlist the aid of lay persons philanthropically inclined. Only through efficient organization and increased membership in our local, state and national associations can we accomplish those things which are desired by practically every member of the profession, yet for which comparatively few have worked in the past.

On my tours during the past year, I have been very happy to note the fighting spirit which exists among members of the profession. More and more they are coming to realize that we must stand united if we are to come back at the unfair practice of socialized medicine. Our educational program must be placed upon a basis second to none. Some of our colleges have already raised their standard of preliminary education to a two-year college basis. The other colleges do not feel that they are able to meet that standard at present, but I believe that, with a well-organized

alumni association supporting each college, that it would not be long before all of our colleges would be on the same standard. We cannot afford to continue to maintain high school standards when schools of chiropody and veterinary medicine require one or two years of college work. This problem may soon be solved, but there remains one which to my mind is of even greater importance—that is the selection of the student. I do not believe in encouraging any one to enter an osteopathic college unless he desires to practice osteopathy. We cannot afford to admit to our colleges those who upon entering practice will be osteopathic physicians in name only. We know that with the raising of standards and the equality of practice rights, many individuals will seek to enter osteopathic colleges in order that they may obtain a license to practice medicine. Much could be said upon this subject, but I will not dwell on it at length because I have confidence that our leaders in osteopathic education will give the matter due consideration.

During the past year, I have had many pleasant associations with osteopathic physicians throughout the country. It is most encouraging to note that the profession is progressing. I have no fear for the future of osteopathy as long as those who are instructing our students are thoroughly imbued with the theory and practice of osteopathy and that our students are impressed with the fact that any one of us can be a medical imitator, but the physician who has knowledge of osteopathy has something far greater in value than any other therapeutic agency which has ever been presented to the world.

In closing, I desire to express my deep appreciation for the hearty cooperation which I have had from Dr. McCaughan, Dr. Hulburt and the other members of the Central office force. The work of the Central office has been a revelation to me, as I am sure it would be to you if you had the opportunity of seeing a close-up of its activities. I am grateful to the various committee chairmen who have so effectively carried out the work assigned to them. I feel that I am being graduated from a course in osteopathic organization work the better prepared to return and face the numerous problems which arise in our profession.

May I express my appreciation to those throughout the country who have so courteously entertained me during the past year? I bespeak for the incoming President the same cooperation which I have enjoyed.

101 W. 57th Street

Traumatic Surgery*

WM. WILLIS JENNEY, D.O.
Long Beach, Calif.

The increasing tempo of transportation and an apparent national heedlessness for the safety of others has lifted this division of surgery to the dignity of a specialty. No longer may the treatment of the injured be left to nurses, undergraduate medical students, and the salaried physician of small ability. This type of care has caused such a mass of unsatisfactory results, both to the injured and to the insurance carriers, that increasingly careful attention is being paid to the early treatment of traumatisms. Supervision by trained surgeons, preferably those who are familiar with the handling of the late results of improperly treated injuries, is becoming more common. Standardization of treatment is, as yet, an unattained goal.

It is impossible, in the time allotted, to more than suggest certain practices. The following statements are conclusions derived from clinical experience with most of the procedures recommended in modern practice. These are not presented as *the* proper system of treatment, but as a treatment which has seemed best to me in handling a very large number of injuries in this hospital during the past six years.

The recently injured patient usually is suffering from pain and either has, or is threatened with, shock. The relief of pain is one of the greatest obligations of a physician. Too often I find that morphine has already been given, but inadequately. A large young adult male with a compound, comminuted fracture of both bones of the leg, for example, a bumper fracture, has been given a sixth grain of morphine hypodermically. Even if he had had a quarter grain, it would have to be repeated soon. There being no contraindication in his general condition, he should have received a half a grain. It is imperative that full dosage be given within the tolerance of the patient. I feel certain that I have saved the lives of some patients by this measure alone. Of course, one does not give morphine in head injuries, at least until there has been a comprehensive examination, and even then I prefer some other type of sedation in this class.

Splints to an injured extremity and traction, where needed, must be applied at once. This can be done quickly. If carefully done, it causes but little discomfort and the immediate relief obtained may also be life-saving in its prevention of the development of shock. This has been stressed so much that further discussion is unnecessary.

All contaminated wounds should be débrided at once, using two-glove technic, cleansed with half strength tincture of iodine, neutralized with alcohol and irrigated with warm sterile normal saline solution. I believe that these wounds should be sutured immediately with interrupted stitches

*Paper presented before the conjoined staff of the Los Angeles County Osteopathic Hospital.

and the part immoblized. If infection develops, stitches can be removed and drains inserted. I follow this same procedure in compound fractures, removing only grossly contaminated or detached fragments of bone. If a wound is not seen until after 6 or 8 hours have elapsed since the injury, it should be irrigated with normal saline solution for several minutes and then left open with moist dressings, kept constantly warm and moist, with Carrel-Dakin or azochloramid solution. This is continued for about 3 to 4 days and then the skin edges are approximated with adhesive and sterile vaseline dressings are applied. If infection is controlled, then dressings are not disturbed except to be changed every three days. Dressings on all cases are changed as infrequently as possible. All wounds in street injuries are given mixed anaerobic antitoxin in prophylactic dosage. This is repeated in three days in severely contaminated or macerated wounds.

In most cases it is possible to repair wounds and reduce fractures or dislocations under local anesthesia. This is the method of choice, local field block being simplest and usually adequate. It is the ideal anesthetic in traumatic cranial surgery. The ease with which 5 cubic centimeters of 1 per cent novocaine injected at the fracture site will permit reduction of clavicular fractures is the best argument I know to impress the general practitioner. Meticulous asepsis and the tip of the needle within the fracture hematoma are the sole requirements for safe and complete anesthesia.

Compound fractures are handled as described previously under wounds. No internal fixation is used other than bone suture with chromic catgut, and this is omitted where possible. Usually, it is possible to prevent overriding and displacement by spiking one end of shaft fractures and hooking it into the medulla of the other fragment. Angulation is prevented by external fixation. Fractures of the lower extremity are usually handled on a Braun frame.

With improvement in ability at closed reduction, operative interference in simple fractures has been uncommon. Exceptions are patellar and olecranon fractures with separation, which are primarily wet surgery. In any simple fracture, incision is delayed for at least five days to permit what John B. Murphy called "coffer-damming of the tissue." This has lowered postoperative infection to a minimum. For internal fixation in closed fractures I prefer, in the order named: catgut, prepared, and autogenous fascia, beef-bone screws and plates, stainless wire of ½ and 1 mm. thicknesses, Sherman or Lane plates. I rarely use autogenous bone grafts in the fixation of simple fractures, except in locations where non- or delayed union is anticipated, because of the increased time of operation, further trauma to an already damaged bone, increasing danger of infection, possible interference with circulation, and the relative frequency with which these grafts fracture before adequate external fixation can be applied.

External fixation must be applied accurately to fit the patient. It must be durable, inexpensive, easily applied, and not easily disarranged by the patient or attendants. Plaster of Paris fills all of these requirements. All encircling casts of extremities are split routinely while the plaster is wet unless the casing is applied personally and there can be careful, close observation of the postoperative progress.

Two case histories are presented in brief for comparison of morbidity and resultant cost in properly handled and improperly handled compound fractures.

G.O. (P.F. No. 350-912), male, aged 48 years, was admitted to Ward 380 on the morning of April 6, 1934, suffering from numerous abrasions and lacerations of the face and body and a compound fracture of the lower third of the right tibia and fibula with a simple transverse fracture of the same fibula in its upper portion. The accident occurred three hours previously and there had been no treatment other than bandaging his wounds, splinting the leg, and a hypodermic injection of a quarter of a grain of morphine. This was done by the ambulance intern.

He was removed immediately to the surgery and under gas-ether his leg wounds were débrided, iodized, and closed with interrupted sutures. The leg was placed on a Braun frame and the long spiral fracture was gradually reduced by means of skeletal calcaneal traction. Because of numerous abrasions on the leg, moist chlorinated dressings were applied. Mixed anaerobic antitoxin was given and the patient returned to the ward. There was no evidence of infection in the leg, although a face wound developed an abscess which had to be lanced. Sutures were removed on the sixth day.

April 26: Casted on frame and transferred to the outpatient department. May 22: Walking iron. July 5: Little callus; blood injection given at fracture site. New walking cast made. August 17: Cast removed. September 28: Discharged from the orthopedic service.

Summary: Bed patient at the county osteopathic hospital—20 days. Total disability—4 months. Treatment—5½ months.

W.J. (P.F. No. 349-972), male, aged 35 years, was admitted to Ward 380 on the morning of April 5, 1934, suffering from numerous abrasions and lacerations of the face and body and a compound comminuted fracture of the lower one-third of the right tibia with a transverse simple fracture of the right fibula. He had been taken to a receiving hospital at 10:00 o'clock the previous evening where his wounds had been antisepticized and sutured without débridement and the injured extremity immobilized in a box-splint. Because of the length of time following the accident and the type of treatment received at the emergency hospital, it was felt that débridement was inadvisable. Several sutures were removed, moist chlorinated dressings were applied and gradual reduction was begun upon a Braun frame by means of skeletal traction through the calcaneus. Mixed anaerobic antitoxin and sedatives were given.

There was persistent purulent drainage, and it was not until April 23, 1934, that irrigation could be discontinued and sterile vaseline dress-

ings applied. A notation was made on May 1, that no crepitus could be elicited and on May 4 a cast was applied on the frame, windowed to permit dressings to be changed over the compound wound which was still draining slightly. On May 22, roentgenographs revealed no evidence of callus. A walking iron was added and the patient transferred to the Windsor Hospital for convalescence and from there reported at intervals to the outpatient department.

There were several recastings and numerous dressings during this period. On September 17, the cast was removed and only slight callus was present and there was some motion at the site of fracture. Partial weight bearing was permitted. Percussion to the heel and over the fracture was ordered.

October 15, 1934: Slight motion. No drainage. Bier's hyperaemia was added to the previous routine.

January 3, 1935: Was told he could return to work.

April 2, 1935: Discharged from the orthopedic service.

Summary: Bed patient at the county osteopathic hospital—7 weeks. Convalescent, home—6 months. Total disability—10 months. Treatment—1 year.

2935 Vista Street.

Eclampsia*

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The term, eclampsia, comes from a Greek word meaning "a shining forth." It is a convulsive disease peculiar to the later months of pregnancy, usually characterized by high blood pressure, marked albuminuria, and edema. It is associated with such symptoms as headache, dizziness, disturbances of vision, epigastric pain, tonic and clonic convulsions, and sometimes coma and death.

Eclampsia is not a new disease, for convulsions during pregnancy were described by ancient writers. There is no similar disease in animals. Paresis in cattle, once thought to be due to eclampsia, is really postpartum weakness and is not due to convulsions.

The incidence of eclampsia varies with localities and countries. It is more common in cold than in tropical countries although it occurs in southern United States as frequently as in the north. On the whole, eclampsia occurs about once in sixty-eight deliveries of primigravidas and once in 4,000 deliveries in multigravidas. The frequency of recurrence of attacks is not great. Only about 2.6 per cent of patients have recurrence.

No generally accepted theory has been produced as to the cause of this disease. What is the toxic substance which causes one pregnant woman to have eclampsia, but not another woman under the same external conditions; what is the toxic substance which causes the same woman to have eclampsia in one pregnancy and not in a subsequent one?

Many theories have been advanced, but not one has been conclusively proven true. Some have thought that eclampsia is due to uremia. But the majority have found no association between eclampsia and kidney toxemias.

Others have expressed the thought that these forms of convulsions are of infectious origin. Some have suggested that it may be due to absorption of infected placental infarcts, urinary infections, etc.

Still others believe that diet is the all important factor in the causation of eclampsia. Some have suggested that the loss of bodily fat, and more physical labor, are important in preventing eclampsia; whereas others believe that a high vegetable diet and reduction of intake of animal protein is all important. But does this answer the question? Why should dietetic factors cause this type of disturbance in the pregnant and not in the non-pregnant woman?

Others believe that the trouble is in the glands of internal secretion. Others that the condition arises from fetal causes, due to poisoning of the woman's system by toxins generated from chorionic villi and the ectoderm of the placenta. This poison has been called syncytiolysine.

Several outstanding hypotheses that eclampsia is due to physiologic chemical changes in the body have been given. Some believe that the convulsions are due to cerebral anemia caused by edema which affects the brain as well as other bodily tissues.

Some process causes the smaller blood vessels to become permeable to fluids, allowing edema to develop.

Again others believe that hypoglycemia is an important factor in producing eclampsia, while others on the opposite side believe that hyper- and not hypoglycemia is the causative factor. However, no subject is more intriguing in research work than the study of toxemia in later pregnancy. Medical men have searched fruitlessly and still are searching fruitlessly for a definite answer to this question—to what is the toxemia present due? In my small sphere I have contacted possibly a dozen of these cases, and I am impressed with the fact that I have found routinely an osteopathic joint lesion in exactly the same location in every case. I believe that eclampsia and allied toxemias of pregnancy can be traced to physiologic-chemical imbalance having at its very root a mechanical cause which is nothing more nor less than osteopathic joint lesions. Pregnancy

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serves to aggravate this imbalance (because of the extra strain on the organism) until convulsions are the final result. But correction of the lesion will remedy this imbalance and I have proven this in my own practice many times.

Usually, eclamptic convulsions are preceded by warning symptoms such as edema, severe and persistent headaches, disturbances of vision such as flashes or spots before the eyes, dimness, and epigastric pains. Other premonitory symptoms are nervous irritability, muscular twitchings, restlessness and sleeplessness. One of my patients also had severe, intolerable itching without any signs of a rash being present.

An eclamptic convulsion most nearly resembles an epileptic attack. The onset is abrupt, usually initiated by a sharp cry from the patient, followed by clonic, convulsive jerking of the muscles of the extremities and face, grinding of the teeth, and the appearance of froth, often bloody, on the lips. If the tongue is not protected, it will become badly lacerated. The eyes are staring and fixed, usually with dilated pupils. The face is flushed and edematous. The clonus may last 30 to 60 minutes followed by tonic rigidity for a shorter period. The breathing which was shallow or absent now becomes deep and very noisy. Urine and feces pass involuntarily. A coma usually develops which lasts several hours. The systolic blood pressure usually rises 10 to 30 mm. with a corresponding, though much slower, rise in the diastolic pressure. Temperature ordinarily rises from 2 to 5 degrees, although it may go to 105 F. The increase in temperature is due to a disturbed thermal center and not to infection. In favorable cases, no more convulsions occur. In less favorable cases they may return at once or after hours, days, or even weeks.

As the convulsions proceed they become more severe, often with shorter intervals between them, more marked cyanosis, rapid pulse, and deepening coma and death. The average number of convulsions in fatal cases may be between ten and twenty, although death may follow one convulsion.

The convulsions may occur in pregnancy, at labor, or in the puerperium. The usual time is the later months of pregnancy. More than one-half occur at this time, about one-fourth in labor and one-fifth in the puerperium. Often the muscular irritability accompanying eclampsia produces uterine contractions which deliver the fetus. Eclampsia during labor hastens delivery due to the same reason.

Convulsions during pregnancy may be caused by conditions other than eclampsia, such as epilepsy, uremia, apoplexy, hysteria, etc. But a careful history taking, close observation of the attacks, and urine and blood analysis will make the decision.

Maternal mortality in eclampsia is 10.3 per cent for prepartum, 0 per cent for intrapartum, and 8.7 per cent for postpartum eclampsia. But these percentages do vary greatly according to mode of treatment. Under osteopathic care these percentages are at a minimum. Death in convulsions may be due to cardiac failure, pulmonary edema, and cerebral vascular injury.

The infant death rate ranges from 20 to 40 per cent. Many fetuses die before delivery, others from pre-maturity, toxemia, injuries at birth and also drugs used to control the mother's convulsions.

Pathology in eclampsia occurs in the liver, kidneys, brain, lungs and heart. This pathology consists for the most part of arterial thrombosis with anemic and hemorrhagic necrosis and edema. Oftentimes the pathology in the kidneys is similar to acute nephritis with edema of the tubules and parenchymal degeneration.

TREATMENT

Eclamptic convulsions are an emergency which requires immediate treatment. It is absolutely necessary to control the convulsions whether they occur before, during, or after labor. The radical treatment looks forward to the immediate termination of labor while the conservative method deals with control of convulsion, and delivery of the patient is not forced.

The conservative or "middle line" method has been used mostly in this country in recent years although abdominal cesarean section has been done in selected cases.

The treatment of eclampsia which I have found best may be listed under four headings:

1. Control of convulsions.
2. Relief of hypertension and other symptoms of the toxemia.
3. Termination of pregnancy.
4. Postpartum care.

Called to see a patient suffering with convulsions, the first thing I should do (after my diagnosis is made), is to give one-quarter grain of morphine in 2 cc. of 25 per cent magnesium sulphate solution intramuscularly. The magnesium sulphate has a tendency to reduce acidosis and toxemia. Then, if the diastolic pressure is more than 120 mm. or there is cyanosis, I should withdraw 300 to 500 cc. of blood by venesection. Usually venesection temporarily lowers the blood pressure, relieves congestion in cerebral and glomerular vessels, and indirectly increases the output of urine. Next, I should treat the patient osteopathically in the region between the seventh and eleventh thoracic vertebrae where I have always found trouble. If this is impossible, due to convulsive movements of the patient, another intramuscular injection of morphine and magnesium sulphate may be given. But the thoracic region must have attention as soon as possible and movement secured in each segment in that region. At all times the patient's tongue must be protected with a padded mouth gag or a clothespin.

After the region between the seventh and eleventh thoracic vertebrae has been cared for, up to 500 cc. of a 20 per cent solution of dextrose may be injected intravenously. This will assist the patient in that it acts as a diuretic, spares the liver cells, and reduces acidosis, and cerebral and general edema.

When the convulsions are controlled, subsequent treatment depends on several things. When

the convulsions cease, there may be improvement in other symptoms, and convulsions may not recur, especially if osteopathic manipulative treatment is given every 2 to 4 hours with special attention to the seventh to eleventh thoracic vertebrae.

If, under these circumstances, the fetus is below the period of viability, it may be carried to term without inducing labor. But if unfavorable symptoms again recur, such as a rise in blood pressure, increased albuminuria, etc., it is best to induce labor. Labor should be induced and terminated by means of the method used most practically by the attendant. Usually the rupture of the amniotic membranes and the use of a No. 5 Voorhees bag will accomplish what is desired.

Fortunately most cases of eclampsia occur near or at term. If the convulsions do not initiate labor, it may often be brought on by the introduction of 2 ounces of castor oil into the stomach through a stomach tube, at this time. When labor is not begun in 24 to 48 hours, the dose may be repeated and if this fails a Voorhees bag may be used. One should not forcibly dilate or traumatize the cervix as the attendant shock is undesirable. The second stage may be hastened as much as possible by the use of forceps or by version.

Some authorities advise immediate cesarean section, especially if the fetus is alive and if there is a marked disproportion between the size of the fetus and the birth canal.

When the primary convulsion occurs in the course of labor, the conduct of labor is the same as in prepartum eclampsia. Unless there is a disproportion between size of fetus and birth canal, or rarely, a firm, undilated cervix indicating the advisability of cesarean section, the patient is given sodium amytol, 6 to 9 grains, intravenously if necessary, and delivery is attained as described before. Usually the convulsions cease and do not return after delivery is accomplished.

The occurrence of postpartum eclampsia is one of the strongest arguments against radical treatment, for it proves that emptying the uterus does not always stop the convulsions. Any case of severe preeclamptic toxemia is a potential case of eclampsia for 24 to 48 hours after delivery and the patient should have constant osteopathic care and observation for at least 2 to 3 days.

After delivery, the eclamptic patient should have a diet low in protein, and fluids should be given profusely. Salt should be added to the diet only when edema has entirely disappeared. The output of urine should be measured, for the possibility of anuria should be kept in mind.

Readings of blood pressure and output of urine are recorded daily. The patient should be kept in bed until the blood pressure (systolic) reaches 140 mm. or until the albumin is reduced to two plus. When the blood pressure is not normal in 2 weeks or there is still two plus albumin, chronic nephritis is usually the trouble. The patient should have a "follow up" examination for one year postpartum. Another pregnancy may cause an acute "flare up" of the existing nephritis and cause the preeclamptic toxemia leading to eclampsia in subsequent pregnancies.

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Conditions of the Shoulder*

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The shoulder-joint is a free ball-and-socket articulation controlled and retained in position almost entirely by muscles and atmospheric pressure. Laxity of the articular capsule and other supporting ligaments is notable. The joint is protected above by the acromion and coracoid processes and the coracoclavicular ligament.

The ligaments of the shoulder-joint are the articular capsule, the labrum glenoidale, the transverse humeral, the glenohumeral and the coracohumeral. The capsular ligament completely encircles the joint which encloses the glenoid cavity and the anatomical neck of the humerus. Normally this ligament allows extraordinary freedom of movement. The capsule has two openings: one for the long tendon of the biceps brachii and one communicating with a bursa beneath the subscapularis tendon. Occasionally a third opening exists between the joint and bursal sac underlying the tendon of the infraspinatus muscle.

The capsule is reinforced above by the coracohumeral and the superior glenohumeral ligaments and the supraspinatus muscle. The middle glenohumeral band and the subscapularis muscle strengthen the capsule in front. Additional support is given below by the inferior glenohumeral band and the long head of the triceps muscle. The tendons of the infraspinatus and teres minor muscles reinforce the capsule behind.

Synovial membrane lines the glenoid ligament and is reflected over the capsule to give rise to a long tubular sheath which envelopes the biceps tendon. This sheath continues along the tendon into the intertubercular groove as far as the surgical neck of the humerus. The transverse humeral ligament converts this groove into a canal. The labrum glenoidale is a fibrocartilaginous rim which deepens the glenoid cavity.

The muscular bellies of the subscapularis (anteriorly) the infraspinatus and the teres major (inferiorly) constitute the muscular support which gives the shoulder much of its stability. Loss of muscle tone, resulting from paralysis, atrophy or injury, allows the arm to become a dead weight which causes the humerus to sag and thereby produce a definite depression beneath the acromion process.

Luxations of this joint are frequent owing to its exposed situation, free mobility, and anatomical construction. For purposes of convenience, luxations of this articulation are divided into two gross types—anterior and posterior. An anterior dislocation is one in which the head of the humerus is either on or anterior to the long head of the triceps muscle at the lower edge of the glenoid fossa—this is the more common of the two. The other type includes all posterior displacements of the head of the humerus. In addition to these, there are two rare luxations

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known respectively as supracoracoid and luxatio erecta.

Construction of the shoulder joint gives it the full range of movements: flexion and extension, adduction and abduction, circumduction and rotation. The axis of motion in flexion and extension is oblique, and passes through the head and neck of the humerus and the center of the glenoid fossa. The head of the humerus revolves upon the center of the fossa and allows swinging of the arm—forward in flexion and backward in extension.

In adduction and abduction the humerus rolls up and down on the glenoid fossa. In circumduction the humerus describes a cone whose apex is represented by the shoulder-joint and base by the circular motion of the distal extremity. Rotation occurs around a vertical axis passing from the center of the head to the inner condyle of the humerus. Forward rotation rolls the head of the bone backward in the socket as the greater tuberosity and shaft turn forward. In backward rotation the head of the bone slides forward as the tuberosity and shaft turn backward and outward.

The shoulder is supplied with two sets of muscles: one connects the shoulder girdle with the trunk and the other connects the humerus with the shoulder girdle. The latissimus dorsi, posterior fibers of deltoid, teres major, teres minor, and lower fibers of the infraspinatus act as extensors. The anterior fibers of deltoid, the clavicular fibers of the pectoralis major, coracobrachialis, short head of biceps, and upper fibers of subscapularis serve as flexors. Abductors are the deltoid, supraspinatus and long head of the biceps: adductors are the pectoralis major, latissimus dorsi, subscapularis, infraspinatus, teres major, teres minor, coracobrachialis, short head of biceps and lower head of triceps. The medial rotators are the pectoralis major, latissimus dorsi, teres major, subscapularis and anterior fibers of the deltoid. The lateral rotators are the posterior fibers of the deltoid, the infraspinatus and teres minor. Acting consecutively these groups produce circumduction.

BURSITIS

There are many bursae in the vicinity of the shoulder-joint. Besides the subdeltoid or subacromion bursa, there is one between the subscapularis and the capsule of the joint which has constant communication with the cavity of the joint; a bursa between the capsule and the tendon of the infraspinatus occasionally communicates with the joint. Another lies between the long head of the triceps brachii and the teres major and yet another between the teres muscle and the bone. Any of these may become inflamed and distended with fluid as the result of strain or direct injury. Rarely inflammation is tuberculous.

Of all shoulder bursae the subacromial bursa is the most exposed and accordingly the most susceptible to injury. It is located between the muscles on the superior aspect of the shoulder-joint and the deltoid muscle. It is prolonged under the acromion process, but remains outside of the capsule and has no communication with it. When the arm is abducted the entire bursa becomes subacromial; when adducted it becomes largely subdeltoidal.

Bursitis may be characterized by an inflammatory effusion which distends the capsule and tends to escape at the weakest point. Codman describes three types of bursitis: the *acute* or *spasmodic* is characterized by local tenderness immediately below the acromion process and outside the bicipital groove. Approximately ten degrees of abduction are possible without moving the scapula—after which the scapula is spasmodically locked and moves with the humerus. Pain is present along the outer side of the arm and around the insertion of the deltoid, and the patient may be unable to abduct the arm voluntarily. In *subacute* or *adherent* bursitis, adhesions produce a definite mechanical interference, especially to abduction and external rotation. Pain is localized much the same as in the acute type. However, the tender point under the acromion and at the base of the bursa does not disappear when the arm is abducted. The third type is *chronic nonadherent,* with thickening and roughening of bursae. If local tenderness be present, Dawbarn's sign† can be elicited. When irritation is mild the patient may complain only of a painful "catch" at that point in abduction where the subdeltoid bursa actively shifts or slips into the subacromial position, and again, when the bursa reverses its motion on recovery of abduction.

During the acute stage, a strap support to take the weight-load of the arm off the shoulder is generally advisable. The arm may be kept abducted in a splint to allow for relaxation of the deltoid and to prevent the base of the bursa from coming in contact with the acromion. Chronic adhesions should be broken up by passive movements and followed immediately by application of cold compresses or ice-pack; thermal methods, such as diathermy or radiant heat, are valuable later on.

Under gas anesthesia, adhesions are best broken up in the following manner: Flex the forearm on the affected side to a right angle with the upper arm; grasp the patient's wrist firmly with one hand and cup the palm of your other hand over the point of his elbow; elevate the shoulder girdle by forcing the point of the elbow upward. Strongly supinate and pronate the forearm, the while maintaining the shoulder elevation. The long axes of the humerus should be shifted to varying angles in relation to the glenoid cavity. At these various angles sharply supinate and pronate the forearm on a short axis —with the elbow fixed. This serves as a powerful leverage for rotating the humerus in two directions on its long axis. Gradually abduct the arm until it aligns with the level of the shoulder. This is the most favorable position for breaking up most adhesions.

†Dawbarn's sign: In acute subacromial bursitis, when the arm hangs by the side, palpation over the bursa causes pain, but when the arm is abducted this pain disappears.—W. A. Newman Dorland's Medical Dictionary, Ed. 16, W. B. Saunders Company, Philadelphia, 1932.

Muscles closely applying to the shoulder joint are arranged so concentrically that all respond to about the same technic. Adhesions of muscle tendons as well as those of the muscles themselves break down under the force applied. The short rotary motion described has an action not unlike a windlass and, inasmuch as movement is on a short arc, the possibility of injury is minimized.

DERANGEMENT OF BICEPS TENDON

The long tendon of the biceps muscle is lodged in the bicipital groove between the two tuberosities of the humerus. It passes over the head of the humerus and under the coracoacromial ligament and, at the upper part of the glenoid fossa, is prolonged into the glenoid ligament which bifurcates to send fibers right and left into the labrum glenoidale. The tendon is covered with a synovial sheath which passes with it through the opening in the capsule and continues a short distance along the bicipital groove. It is held in the groove by the transverse humeral ligament—a fibrous expansion from the pectoralis major tendon. The tendon of the long head of the biceps usually escapes injury, but when rupture does occur, the tendon retracts and becomes united with the bone. Normally, it steadies the head of the humerus in movements of the upper arm.

Exposure, trauma, or infection is apt to set up inflammation of the synovial membrane covering the tendon. The tendon itself is subject to minor derangements, the precise nature of which remains obscure. Certain combinations of movements that include violent rotation of the humerus on its long axis and circumduction of the upper arm promote strain of the ligament in the groove. When an inflammatory process or adhesions have more or less fixed the tendon in deflexed position, it appears that a minor lateral slip occasionally occurs.

Localized pain and tenderness are noted at the point where the tendon passes under the transverse humeral ligament. Pronation and supination usually aggravate such pain—particularly when circumduction is added. There is palpable evidence of decreased motion of the tendon in the groove.

Reduction is simple. With the patient supine, place your knee—to act as a fulcrum—under the humerus and close to the shoulder joint. Fix the tendon between the finger and thumb. Abduct the upper arm to a right angle with the torso, and the forearm to a right angle with the upper arm; then, interlock your fingers with those of the patient and strongly supinate his forearm. (This causes the humerus to rotate so the groove moves forward, inward, and slightly downward.) At this point gradually extend the forearm, but before complete extension is attained, sharply reverse the arc of motion by bringing the forearm into strong pronation. Permit no slacking of traction-extension. (This forces the groove suddenly backward, outward and upward.) During the entire procedure, hold the tendon firmly in order to keep its position as nearly stationary as possible. This sequence of movement disengages the catch and forces the tendon deeply into the groove.

ETIOLOGY OF BRACHIAL NEURITIS

The cause of neuritis may be mechanical or traumatic; circulatory or inflammatory; bacterial or alkaloidal in nature. Metallic or other poisoning, exposure to cold, toxemia or infection may result in an ischemia, deficient oxygenation and nutrition of nerves involved followed by neuritis. Vasomotor phenomena of diseased arteries are often responsible for neuritic symptoms of which elderly patients complain.

A true neuralgia may have hyperemia of nerves for its basis. If followed by a morbid process involving nerve sheaths and connective tissue, a true interstitial neuritis is set up. Degenerative changes confined to nerve fibers give rise to parenchymatous neuritis. Diffuse neuritis is a combination of these two—and evidences both inflammatory and degenerative changes.

Numerous painful and semiparalytic conditions involving the shoulder girdle and arm come under the classification of brachial neuritis. Distribution of pain is variable. In some instances pain originates in the area of the costotransverse articulation of the first and second ribs and radiates upward toward the neck, or outward toward the shoulder; again it extends from the medial end of the clavicle, follows laterally along the clavicle or first rib and goes deeply into the shoulders; at times it runs along the long axis of the upper thoracic ribs, goes deeply under the scapula and into the axillary space, or, it may course along the spine of the scapula.

Pain in the upper brachium is usually associated with incapacity of the shoulder-joint; abduction and rotation of the arm are much inhibited. Pain may be reflected to various parts of the arm and even extend to the fingers. Tenderness and pain are generally most severe along the nerve trunks. Trophic and vasomotor disturbances are frequently encountered and lameness, soreness or stiffness of muscles are common. Actual alterations in sensory, motor, reflex, and trophic functions of nerves depend upon the character of the inciting morbid process.

Causal factors include vertebral joint lesions of the cervical and thoracic spine, as far down as the eighth and sometimes the ninth thoracic. Rib lesions are a common cause. The presence of a cervical rib should always be regarded with suspicion and maladjustment between clavicle and scapula should never be overlooked. Muscle spasm or facial stress which alters tension and pressure of nerve trunks disturbs nutrition of axonic processes.

Peckham, Shain, Downing, and Berk attempted to establish a common tissue factor whereby vertebral, costal, clavicular and scapular lesions—which cover a relatively wide mechanical distribution—can produce or contribute to the same effect. With special reference to pressure or tension, they studied the normal mechanics of the brachial plexus, from the vertebral

foramina to the middle of the brachium, and placed special emphasis on fasciae involved.

Peckham reported a demonstrable "semitense bridge of fascia attached to the outer margin of the first two ribs" following backward and around from ribs to scapula and across to the coracoid process; proceeding from there upward and along the clavicle and returning again to the first rib. Without going into detailed description, the significance of this complicated "semibridge" composed of a triangular membrane and fibrous bands is reasonably evident. Nearly all of the nerves of the brachial plexus pierce the fascia in question—some of them twice—and if its tension were to be increased above normal, the intensification would reflect in nerve irritability. If tension continued, pressure might be sufficient for normal stimuli received at the receptor end to register in the sensorium as the equivalent of pain.

In view of the findings of exhaustive research—which have proved conclusively the far-reaching effects of seemingly minor structural and physiological mechanics—it becomes apparent that the practitioner must exercise his keenest perception if he is to recognize and overcome the subtle obstacles in the path of osteopathic correction.

DISTURBED MUSCLE RELATIONS

The *deltoid muscle* arises from the spine, the acromial process of the scapula, and the outer third of the clavicle, and inserts into the deltoid tubercle of the humerus. By careful dissection Peckham found a distinct physical separation between the muscle fibers arising from the clavicle and those arising from the adjacent acromial process, but no functional difference under normal conditions, as the close arrangement of the two groups permits them to act as one. This interfused action is disrupted by lesions which alter the actual distance between origin and insertion of one portion of the muscle while the portion immediately adjacent remains in statu quo. In other words, any lesion which creates a deviation between the two parts results in strain or tearing of the interlacing fibers when strong voluntary contraction is initiated. An acute inflammatory process is brought about and, in many instances, the muscle refuses to contract. This musculoneuritic condition is not to be confused with a subdeltoid bursitis.

The narrow, elongated *teres minor* rises from the dorsal surface of the axillary border of the scapula. The triangular *infraspinatus* occupies the infraspinatus fossa; the *supraspinatus,* the supraspinatus fossa. All three insert into the greater tubercle of the humerus and bear a close anatomical relation. Contractural disturbances embarras medial rotation of the arm chiefly, and referred pain is particularly expressed in the axillary and suprascapular nerves.

The *latissimus dorsi* arises from the iliac crest, the aponeurosis of the lumbar and the lower half of the thoracic region. It attaches to the border of the intertubercular (bicipital) groove. Shoulder symptoms encountered together with sacroiliac strain are set up by referred mechanical stress of this muscle. Contractured, it may give rise to pain in areas innervated by the thoracodorsal and median nerves.

The *teres major* arises from the inferior angle of the scapula and inserts into the lesser tubercle of the humerus. Fiber bundles spiral upward and the muscle undergoes torsion on its own axis. Contractures of this muscle may refer pain to the axillary (O. T. circumflex) nerve or any of its branches.

The *subscapularis* takes origin from the costal surface of the scapula and inserts into the lesser tubercle of the humerus. It is in close anatomical relation to the brachial plexus and the axillary nerve. Pain deep in the posterior axillary fossa suggests involvement of the subscapularis.

The *trapezius* takes origin from the external occipital protuberance, the ligamentum nuchae, and the spinous processes of the seventh cervical and all thoracic vertebrae. Its attachments are wide-spread, tracing to the lateral third of the clavicle, the acromion, and the spine of the scapula. Any intrinsic disturbance in its muscle mechanics can affect acromioclavicular relations.

The *rhomboideus major* arises from the second to the fifth thoracic vertebrae and the supraspinal ligament. The *minor* arises from the ligamentum nuchae and from the spinous processes of the seventh cervical and first thoracic vertebrae; both attach by a thin membrane to the vertebral border of the scapula. When contracted, they give rise to interscapular pain which penetrates deeply into the intercostal and scapular structures.

The *levator scapulae* arises from the transverse processes of the atlas and axis and from the posterior tubercles of the transverse processes of the third and fourth cervical vertebrae and inserts into the vertebral border of the scapula. When involved, there is usually deep tenderness near the sites of its attachments and this sensitiveness may extend outward and along the upper posterior aspect of the shoulder. This muscle lifts and rotates the upper two ribs and, in chronic contraction, causes pressure disturbance of the brachial plexus.

The *serratus anterior* arises by digitations from the upper nine ribs, passes beneath the blade of the scapula and inserts into the ventral surface of the vertebral border of the scapula. Hypertonus of the proximal slips of the serratus may effectively alter the position of the upper ribs through costal pull; effects may be noted in both the intercostal and brachial nerves.

The *subclavius* arises from the first rib, passes between the clavicle and the first rib, to insert into the groove under the clavicle and between the costoclavicular and conoid ligaments. When contracted, it maintains a fixed approximation of the first rib and clavicle and not infrequently causes great disturbance of the brachial plexus.

The *pectoralis minor* arises from the upper margins and outer surface of the third, fourth

and fifth ribs and inserts into the coracoid process of the scapula. When contracted, it tends to pull the scapula forward and crowd or jam the acromioclavicular articulation and to refer disturbance to the musculocutanous nerve.

The *pectoralis major* arises from the sternal region of the clavicle and the upper seven ribs, and is inserted into the crest of the greater tubercle of the humerus. When shortened or contractured, it produces a winged scapula, or round shoulder.

THE CLAVICLE

An excellent analysis, by Peckham, of the physiologic functions of the clavicle appeared in THE JOURNAL OF THE A.O.A. June, 1927, which reads in part: "The clavicle holds the scapula away from the thoracic wall anteriorly, although the undersurface of the scapula rests upon the rounded contour of the thoracic wall. The brachial trunks pass to the axilla underneath the middle third of the clavicle. . . . All types of movement of the arm, shoulder, and scapula were produced with relatively small change in the total size, or the shape of this interval through which the trunks pass. . . . This remarkable phenomenon is accomplished because of the multi-functioning clavicle."

The sternal articulation is so nearly a ball-and-socket joint that it would permit movement of the clavicle in all directions—including some rotation around its long axis—were it not controlled by limiting mechanics of the shoulder girdle. As it is, the clavicle moves extensively in a vertical plane and to a lesser degree in a horizontal plane; rotation is limited, but slight movement can be noted with circumduction of the arm. Sharp rotation, with the axis of the arm parallel to the long axis of the clavicle, affords the maximum of rotation at the sternal articulation.

Since the controlling mechanism is the sternal articulation and the scapula is purely accommodative to its shifts of position, relatively no change in relationship takes place with change from one functional plane to another *unless* the acromioclavicular joint is in maladjustment and partially immobilized. That is, the multi-functioning of the clavicle is matched by the multi-accommodativeness of the scapula—thus keeping their relation comparatively constant throughout varying movements.

Lesions of the clavicle, as a whole, are just as important as lesions of the medial and lateral ends. The clavicle is attached to the first and second ribs by two dense layers of fibrous tissue which derive from the deep cervical fascia. Because of this connection, any displacement of these ribs alters the position of the clavicle in direct ratio to the extent of dislocation. The semiflexible cartilage connecting the first rib to the manubrium sterni permits considerable variation in the relation of the anterior end of the first rib and manubrium and, in like manner, the manubrium may be affected by the second rib. Obviously, secondary displacements of the manubrium would have some bearing upon the state under which the clavicle must work.

Since protection of the brachial trunks is dependent upon the clavicle and the clavicle, in its turn, dependent upon the condition of its medial-end structures, it is self-evident that the protective factor is achieved through attaining normal functioning of structures at the medial end of the clavicle.

THE DEPRESSED CLAVICLE

The clavicle sometimes becomes slightly depressed and restricted in mobility by the pull of tensed ligaments and muscles, and this condition may disturb the branches of the superficial cervical plexus which pass over the clavicle. The subclavian artery is beneath the clavicle and the vein and cords of the brachial plexus rest on the first rib. Near the sternal end of the clavicle are the innominate, the left carotid artery, the vagus, and recurrent nerves, as well as the large venous trunks. Because of its close proximity with these important structures, any affliction of the clavicle may induce impairment of both circulatory and lymphatic movements. Constriction of the thoracic inlet may partially block the lymph ducts and anterior jugular vein—in which case, all these associated structures, and also the thyroid, may be afflicted through venous retardation.

Treatment is designed to increase the mobility both of the sternoclavicular and the acromioclavicular articulation; in short, to free the clavicle as a whole. A suitable method is as follows:

Patient supine. Flex the forearm to a right angle with the upper arm and, while holding the upper arm close to the body, bring upward pressure against the point of the elbow. (This raises the shoulder girdle and affords an opportunity to obtain a fulcrum behind the outer portion of the middle third of the collar bone by sinking the fingers behind it at this point.) Bring the point of the elbow across the chest to the midline, the while maintaining elevation of the shoulder girdle and the fulcrum behind the clavicle. Next, elevate the point of the elbow to a level with the top of the shoulder and lift or pry up the clavicle with the fingers. From this position sweep the point of the elbow directly lateralward, so the upper arm is at right angles to the torso and in a position of abduction. Exaggerate leverage by bringing added pressure against the fulcrum and, at the same time, induce forward rotation of the humerus on its long axis so that the forearm of the patient points downward. (This movement carries the humerus into a position where its long axis nearly conforms to the long axis of the clavicle and further forces the clavicle forward and outward.) The point of the fulcrum can be shifted inward, outward, medialward or lateralward to favor whichever end of the clavicle requires the greatest amount of leverage.

MALADJUSTMENT LOCK OF THE ACROMIOCLAVICULAR ARTICULATION

The outer portion of the clavicle has two points of attachment to the scapula: its extreme end fastens to the inner margin of the acromion to form the acromioclavicular joint; more medially it is attached to the coracoid process by

the coracoclavicular ligament. The acromioclavicular joint is surrounded by a capsular ligament which usually contains an intraarticular fibrocartilage. The articular surfaces are smooth and oval; their long axes are anteroposterior. The upper edge of the end of the clavicle is on a slightly higher lever than the upper surface of the acromion. The coracoclavicular ligament consists of two parts—the conoid, which is postero-internal; and the trapezoid, which is antero-external.

In movements of the shoulder girdle, the scapula moves beneath the outer end of the clavicle; the clavicle, in turn, moves upon the sternum, so the entire scapula describes an arc of which the pivotal point is the clavicular joint and the radius the clavicle. The acromioclavicular joint allows the scapula to move forward and backward, upward and downward upon the thorax and in a rotary direction upon an axis drawn at right angles to the center of the bone. The glenoid cavity maintains its obliquely forward direction. By means of its articulation with the clavicle, the scapula can be advanced upon the thorax while the glenoid cavity is kept facing directly outward at all times. As has been mentioned, the clavicle and scapula act in unison under normal conditions.

The most common etiologic factor of stiff and painful shoulder is maladjustment lock of the acromioclavicular articulation. It is more notably identified with brachial neuritis, deltoid myositis, and subdeltoid bursitis than any other mechanical lesion of the shoulder; in fact, it is the most frequently found osteopathic lesion of the shoulder girdle. It is associated with all manner of trauma, but especially with athletic injuries.

The lesion is a rotary lock-strain of the clavicle, although there may be slight upward, outward, anterior or posterior displacement. Peckham considered that a changed relationship between the clavicle and the acromion forces the clavicle into a position to which the scapula cannot accommodate itself. Furthermore, that the factors controlling the position of the clavicle are structures at its medial end which are, of themselves, subject to malfunction. No doubt this is an accurate conception.

Diagnosis is not difficult; the presence of limited abduction and rotary excursion of the shoulder are palpable evidence of lock of the acromioclavicular joint. This condition must be carefully differentiated from bursitis or neuritis. Unusually the extreme tip of the clavicle is elevated to slightly override and jam the acromion process.

Description of the most effective method for reducing this subluxation follows:

Place thumb and index finger of the proximal hand with a firm, deep pressure behind the outer tip of the clavicle. (This acts both as a fulcrum and a pry.) Grasp patient's elbow with the distal hand, maintaining pressure at the fulcrum with the other. Elevate the cupped elbow, sweep it across the midline of the chest, carry it vertically over the top of the head, then laterally; from this point sharply rotate forward to disengage lock and force end of clavicle downward and forward. Holding the same position, reverse the order of movement: elevate the cupped elbow, swing posterolaterally, carry above and behind the head and from there sharply rotate forward across the anterior surface of the chest, and so back to the starting point.

In certain instances an easy position for manipulation and palpation of shoulder and acromioclavicular articulation is with the operator's knee placed under the axilla to act as a fulcrum. This procedure leaves both of the operator's hands free to manipulate as desired.

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Further Studies in Body Chemistry as Related to Osteopathic Lesion Fundamentals*

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At the Wichita A.O.A. convention in 1934 we discussed the effect of body chemistry upon the ease with which osteopathic corrections can be made and upon the permanency of those corrections. We tried to show that with a correct body chemistry bony lesions are restored very readily to normal and the tissue tone is such that the lesion stays corrected. We particularly stressed the improved treatableness in an individual whose body chemistry can be changed from the abnormal to the normal or from relative acidity to normal alkalinity. We urged that an attempt be made to effect this change in order to broaden the scope of effective and permanent osteopathic corrective work.

This altered body chemistry with its accompanying clinical symptoms we attributed partly to foci of infection in the body, but principally to abnormal conditions of the gastrointestinal tract. We traced the relationship which we had found to exist between lesions resisting correction on account of spastic musculature and the pH of various body fluids. The typical case suffering from autointoxication was shown to have usually a hypo-acid condition in the stomach, a deficiency in the secretion of bile and more or less stasis in the colon whence we felt toxins were absorbed, thus explaining the obstinate spasticity and tissue intractability which made lesion correction and maintenance of correction so difficult. In a considerable series of cases we thus found a definite relationship to exist between this well-recognized syndrome and bacterial sensitization of the gastrointestinal tract. We suggested that, regardless of the source of the organisms, they eventually made their habitat in the bowel. We found, clini-

*Prepared for the Thirty-Ninth A.O.A. Convention at Cleveland, 1935.

cally that "unloading" this bowel altered the body chemistry and vastly changed the picture when it came to lesion correction.

In this connection, we wish to quote from a recent statement by George J. Conley[1]: "It is in this portion of the small intestine [terminal ileum] wherein is found the most numerous as well as the most virulent organisms; under the changed environmental conditions precipitated by concomitant stasis even harmless bacteria may become transformed into vicious, virulent ones while those that are virulent normally may become positively wicked. Their toxins are fed slowly into the cecum and the offending colon, the drinking ground of the system, which allows for the maximum absorption and its resultant autointoxication." In other words, it is nothing else than the "slop bucket" that Dr. Still used to talk about.

Since the Wichita convention, further work has borne out these same conclusions. Numerous x-ray studies have emphasized the fact that the thin-walled cecum possesses the least motive power of any part of the colon and that the colonic contents usually remain longest in this region. In the descending colon the contents are hurried through with great rapidity. We wish again to stress the often astonishing degree of treatableness which becomes rapidly apparent as body chemistry is changed by clearing up these cesspools with appropriate diet, colonic irrigation, and osteopathic manipulative treatment.

We have had one big disappointment. While results have been encouraging in general conditions characterized by spastic musculature, we feel that we have failed in the opposite condition, flaccidity. While not as common, it is a tremendous hindrance to effective osteopathic work. We have yet to find a satisfactory explanation and treatment for it. It seems to be more common in women. No conscientious osteopathic physician likes to treat such a case with the knowledge that his corrections of joint lesions will last perhaps only as long as it takes his patient to get down the stairs from the office. We will welcome reports of experiences with this type of case.

Considering the physiology of muscle, we find that there are two different contractile substances in each fiber, one of which gives the usual quick contraction or twitch and the other of which is responsible for the slower contraction or tone or contracture. The spastic condition, referred to previously, we consider to be a contracture or a state of maintained contraction which sooner or later passes over into a fibrous replacement. Howell[2] states that the underlying cause of muscle tone is poorly understood. He says further that the tonus is lost when the motor nerve is cut. To all intents and purposes, these flaccid muscles have lost their irritability or inherent contractility to a great extent. That is, a normal muscle presents a tone which we may define as the state of continuous shortening or contracting depending upon connection with the nerve for the reception of continued discharges of subminimal nerve impluses which cause chemical changes inducing that condition of slight contraction called tonus.

The typically flaccid individual, according to an opinion which we believe originated with W. A. Schwab[3], is the one possessing a marked degree of intestinal autointoxication as contrasted with the spastic individual, who harbors pyogenic foci of infection. To this we cannot agree, since cases of the most marked spasticity have shown no demonstrable nidus of infection, but have yielded to colonic irrigation and diet.

Gour[4], in his "Therapeutics of Activity," says that the flaccid musculatures are due to lack of exercise and will power. This may be true to a certain extent, but it does not cover many cases of housewives who have plenty of exercise with large families to care for. McConnell and Teall[5] differentiate between relaxed, overstretched muscle resulting secondarily from mechanical strain, and the exhausted or debilitated muscle as found in neurasthenia and anemia. Now we will agree that there is probably a definite factor of anemia in these cases, yet it is by no means a constant symptom.

Leftwich[6] lists a number of rare and unusual causes for muscle hypotonia such as amaurotic family idiocy, brain hemorrhages, tertiary syphilis and others quite out of the question in the ordinary run of patients.

Perhaps we must recognize an endocrine basis for some, since the adrenal cortex is the principal regulator of muscle tone and the cortical hormone has much to do with maintaining muscular metabolism. Yet we have failed to find osteopathic joint lesions in the lower splanchnic region of the spinal column consistently enough to explain such asthenia on the basis of a hypoadrenia, nor has the administration of adrenal therapy brought us any marked results in enough cases to suggest a panacea.

There is a possible etiology in the great variety of poisons that we people of civilized nations, and particularly of the United States, wittingly or unwittingly grant entrance to our bodies. Lead or arsenic on fresh or canned fruits or vegetables, sulphur dioxide in bleached dried fruits, potassium bromate and nitrites in white bread, benzoate of soda in preserved foods, ammoniated mercury in cosmetics, lead or thallium acetate in hair dyes, coal tar derivatives in sedatives, potassium chlorate in toothpaste, strychnine in patent medicines and so on down the list. These may be responsible for many deaths, and so far as this discussion is concerned, they bring about functional weaknesses, general weariness, lethargy, loss of health and vigor and other obscure symptom complexes that may be quite pertinent[7].

Still another angle comes to view when we consider the possible role of deficiencies in minerals and vitamins. Irregularities in calcium metabolism, for instance, may be responsible for variations in the normal chemical balance that is essential for muscular contractility[8]. Or the effect may be indirect, depending upon the fact that calcium is indispensable for normal irritability of the nerves[9] and secondarily muscle tone. We might even go so far as to think that there was a failure in the nutrition to the motor nerves with

a background etiology of avitaminosis, somewhat as in beriberi. Animals fed on an autoclaved diet soon show degenerative changes and thinning of the muscle wall of the bowel, if not of the skeletal muscles. Deason[10] describes the action of the vitamins as being like that of sunlight on green leaves, stimulating living cells to action. The comparison of the wilting of leaves and the wilting of muscles, in the absence of this life-giving force, does not, we think, call for too great a stretch of the imagination. Here again, however, we can point to no consistent results in a therapeutic way.

Correspondence with Louisa Burns in the effort to arrive at a solution merely served to confirm our fear that we were still far from a correct solution. In citing a number of cases from her records, where spasticity or flaccidity was a symptom, she notes that the diet seems to have no great influence either way. Her findings are of interest:

One group with abnormally movable vertebrae and frequently recurring lesions were on a diet rich in all vitamins. Another group with the same findings had lacked one or more of the vitamin containing foods. A third group on a rich vitamin diet exhibited generalized hypertonicity of the skeletal muscles. This was also present in a group living mostly on foods derived from grains, with a scarcity of other vitamin containing foods.

Dr. Burns specially mentions the "Lincoln type" of individual as possessing the abnormally relaxed musculature with none of the opposite type recorded except in one case of temporary alkalosis.

She finds both muscular conditions in association with pyogenic foci and in association with amebiases, although the shorter individuals were usually spastic as contrasted with the tall, lanky hypotonic types.

Thus, instead of bringing any real contribution along this line as we had hoped to do, we must confess lack of success to date. If it were possible to accomplish as quick a change from the putty-like condition which we find to normal muscle tone by some therapeutic maneuver as we have been able to do in opposite circumstances, it would indeed be a boon to our osteopathic work. It takes courage to confess ignorance and failure, but sometimes it is only thus that we may progress. We woud rather do it than keep on failing. During the coming year, we hope to make more progress on this absorbing problem. How, then, may we eliminate the "jelly-fish" muscle so that our osteopathic work may be not only effective but also lasting?

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Notes on the Diagnosis and Treatment of Ulcerative Gastritis*

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AN ARTICLE BASED ON THE TALKS AND DISCUSSIONS DURING SEVERAL YEARS' MEETINGS OF THE WOMEN'S OSTEOPATHIC CLUB OF LOS ANGELES.

Diagnosis and treatment of gastritis, peptic ulcers, and related diseases rest upon the pathology present in the digestive tract of the patient at any given time. Pathological processes may become more severe with the passage of time, with repeated or continued irritative conditions, or with the influence of incorrect methods of treatment. They may become less severe as a result of the reparative forces of inflammation and of connective tissue development; correct methods of treatment enable these reparative forces to continue unimpeded. The removal of irritative factors is, of course, an important factor in therapy.

As the pathological conditions vary, according to these and other less common factors, so do the diagnostic findings, and so must the methods of treatment vary, if the patient is to make the most complete and the most rapid recovery.

Osteopathic diagnosis must not be limited to the determination of the presence or absence of peptic ulcer, but must determine also the gastric and duodenal pathology, the pathogenic relations of other viscera, and of those bones and soft tissues whose disturbances may cause, prolong, or imitate gastric symptoms.

Gastritis or duodenitis may be considered as a first stage or as a complication in peptic ulcer. It must be remembered that either acute or chronic inflammation provides the circulatory disturbances, the disturbed muscular reflexes, and the superficial erosions which are steps in the pathogenesis of peptic ulcer.

In the cases of acute gastritis due to superficial irritation, the removal of the irritating substances usually has been accomplished spontaneously by vomiting before the osteopathic physician has been called. Often warm water should be given several times in order to wash the

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stomach. In serious cases lavage is best secured through a small stomach tube.

The history of the case usually provides a tentative diagnosis. Examination of the vomitus or the washings from the stomach should complete or verify the preliminary diagnosis.

Reflex contractions of the mid-thoracic spinal muscles usually occur and this reaction may have some value in promoting the first stage of recovery. Should they persist after the stomach is empty and rested, they should be relieved by manipulation. The relief of such contractions often eases the nausea and vomiting. The mid-thoracic reflexes seem to exert a beneficent effect for a few hours. Upper cervical reflex muscular contractions do not seem to have any recognizable beneficent influence after acute gastritis. They tend to produce lesions of the upper ribs (probably by way of the scaleni and other muscles) and to cause various forms of discomfort; these reflexes should be relieved whenever they are found, in these cases.

Tissues usually are rather rigid and edematous around the solar plexus in any case of gastritis. Having excluded tumors and acute infections, these tissues should be treated gently by manipulation, lifting the tissues, making sure that the drainage is unobstructed. The patient should be placed upon the right side at first. The stomach and the tissues of the epigastrium may then be lifted, edematous fluids drained from the tense or rigid areas around the solar plexus, and the tension relieved from the left hypogastrium and the epigastrium. The patient should then lie upon the left side, when the tissues of the right hypogastrium and the region of the gallbladder can be lifted and manipulated gently, so that drainage from this area is facilitated. In the same way, the duodenum can be manipulated in such a manner as to relieve congestion and to permit normal drainage.

Often definite vertebral lesions seem to have etiological importance. In such cases the treatment is self-evident. The lesion should be corrected by gentle methods, in order to avoid further gastric irritation. Remembering the frequent and early erosions found in the gastric mucosae of animals with similar lesions, a bland diet and a considerable period of rest should be advised.

For one or two days after any attack of acute gastritis, only fluids should be taken into the stomach, and these should be very bland, diluted and nonirritative. Individual peculiarities may affect the actual fluids to be taken. A diet of milk alone, taken in small amounts, perhaps half a glassful at half-hour intervals, is suitable for many such cases. Diluted fruit juices made into gelatin occasionally are gratefully received. Broths and meat extracts usually are harmful. Soups made from vegetable juices are often acceptable. In any case, no fluids should be given which cause discomfort, and no solid foods should be given until at least two days have passed without gastric discomfort.

Chronic gastritis cannot always be differentiated from gastric ulcer and from gastric dilatation. These conditions coexist more frequently than is commonly recognized. Chronic gastritis may be due to vertebral or costal lesions alone; more commonly it is due to these together with persistent and chronic dietetic perversions. Vertebral lesions usually tend to cause a mild gastric discomfort, often mistaken for hunger. The person so affected eats too much and too frequently; he selects foods which are too highly spiced, too concentrated, or of too great variety, in the attempt to relieve the discomfort falsely supposed to be hunger. The control of these habits is difficult, but it is essential to recovery. The patient may be told to select some one article of food and to eat nothing else at any given meal. At the next meal he may select some other food if he wishes to do so. This regime encourages an intelligent selection of foods. A certain amount of supervision is necessary, of course, to prevent dietetic absurdities.

Some degree of gastritis always accompanies gastric or duodenal ulcer. Jejunal ulcers after gastroenterostomy are, in the very nature of the case, associated with inflammation of the stomach. The rare cases of peptic ulcer in Meckel's diverticulum present serious difficulties in diagnosis.

Definite ulceration of the stomach or the duodenum is suspected when gastric symptoms include certain classical factors—pain, vomiting and hemorrhage. Severe pain usually is in the epigastrium, sometimes radiating to other parts of the abdomen; it is always related to hunger or to eating. The time relations of this pain may indicate, roughly, the site of the ulcer. Pylorospasm increases the severity of this pain, in both gastric and duodenal ulcer.

Recent studies indicate that the pain of peptic ulcer is due chiefly to the muscular spasm. This may be relieved by the taking of fluids or foods, or by the administration of neutralizing substances. The mechanism of visceral pain and of its relief is not yet understood.

In cases of ulcerative gastritis, vomiting varies from severe attacks at frequent intervals to mild attacks occurring rarely. Duodenal ulcers rarely cause vomiting. Ulcers in the stomach near the pylorus usually cause severe and repeated vomiting.

Vomitus shows hyperchlorhydria and occasional bloody masses. Fresh blood is bright red; blood kept any considerable time in the stomach is partly coagulated and digested, becoming brownish or blackish, and sometimes resembling "coffee grounds." Ulcers of the duodenum bleed into the intestinal tract, but bloody vomitus may occur.

Blood from the stomach or the duodenum gives a reaction for occult blood in the stools. Such a reaction has value in diagnosis only if the patient has not ingested meat, meat products or extractives, or substances containing hemoglobin or hemoglobin derivatives during the three or four days preceding the examination.

Palpation shows rigidity of the right rectus muscle and of the spinal muscles at about the fifth thoracic and the upper cervical segments. Edema-

tous areas, adhesions, and hyperplastic muscles are palpable around the stomach and the solar plexus, in nearly all peptic ulcers, and these findings increase with increasing chronicity of the inflammation.

Analysis of the gastric juice is helpful in diagnosis. The degree of hyperchlorhydria depends upon several factors discussed in a previous paper prepared by this organization. Mucus, pus, blood, and fragments of tissue from the ulcers may be found in fasting gastric juice.

Perhaps the most useful diagnostic factor, after palpation, is the careful fluoroscopic study of gastric activities and of carefully selected x-ray plates. Information thus secured is of great value in locating the site and the severity of the injury.

The Rehfuss, or the firmer Lavin tube, is more easily and safely passed during fluoroscopic examination by manipulation of the abdomen in such a way that the tip of the tube is guided toward the pylorus.

TREATMENT

Treatment of peptic ulcer depends in part upon the etiology and in part upon the pathology present at the time the patient submits himself for examination.

The history usually suggests that a period of acute inflammation first appeared, to be followed by a variable period during which chronic inflammation, or repeated attacks of acute inflammation, were associated with erosions and, finally, ulceration of the mucous membranes. Even in those cases in which trauma seems to have caused sudden ulceration, indications often can be found, on careful study of the history, that chronic inflammation or repeated attacks of acute inflammation preceded the trauma. It is true that occasional gastric symptoms appear in many persons who never develop symptoms of ulceration.

Surgery is necessary in cases of perforation or severe or repeated hemorrhage. Gastroenterostomy has been superseded by resection or pyloroplasty in selected cases. The gastritis due to regurgitation of duodenal contents, and the occurrence of peptic ulcers in the jejunum after gastroenterostomy, have led to the greater popularity of resection or pyloroplasty. In many cases, however, gastroenterostomy is the sole practicable method of relief.

Abundant scar tissue tends to prevent perforation and to limit the escape of fluids into the peritoneal cavity. Abundant and contracting scar tissue may constrict the walls, forming the characteristic "hour-glass" type of stomach.

Pyloric stenosis may be caused by the contraction of heavy scar tissue. Surgical intervention then is necessary.

PREVENTION

The etiological factors already mentioned indicate the best preventive measures for all forms of gastritis and for peptic ulcer.

Nearly all of us consider the maintenance of normal structural relations of the body to be the most important preventive measure. Some of us emphasize, especially, the importance of wholesome, varied foods, moderately flavored, and eaten with reasonable regularity; fasting is recommended whenever the body is excessively wearied, chilled, heated or emotionally disturbed; and the importance of avoiding trauma and sources of infections anywhere in the body, especially in the nasopharyngeal and buccal tissues. It is hardly necessary to mention avoidance of poisoning, excessive burns or frostbite for the sake of the stomach, since normal people avoid these things at all times. Osteopathic manipulative treatment has been emphasized by many writers. Mattern described the manipulative treatment in detail. He said:

> I believe that the osteopathic lesion plays an important role in the production and maintenance of peptic ulcer; that in a picked group of cases excellent results can be obtained by hygienic, dietetic, and manipulative measures; that treatment should be long continued, the patient being kept under observation and control for two years at least; and that clinical proof of healing should be supplemented by x-ray findings and relief of spinal lesions. (p. 191)

> As Dr. Still used to emphasize, lesions affecting gastric and intestinal function may occur at any point in the spine or the thoracic cage. But from what [is known] about nerve supply, we might expect two regions to be especially prone to primary or secondary lesions in these cases—the upper cervical and the fifth to the tenth thoracic.

> The former is a common finding in ulcer and may be either a primary irritative lesion or a reflex sensory one. Treatment includes, of course, careful attention to normalization and deep relaxation. Because the vagus is already hyperactive, I try to avoid even temporary further stimulation. In severe, surgical borderline cases this is the only manipulative therapy I feel free to use at first. Later, as symptoms subside (usually by the end of a week, and immediately in the more subacute or chronic cases) much more is accomplished by thorough attention to the thoracic region.

> At first patients are moved as little as possible and treated in the supine position only. Careful attention to all regions found in lesion together with deep relaxation of spastic muscles, especially in the upper splanchnic region, will do much to hurry healing and give comfort to the patient.

> However, in cases in which a proper differential diagnosis has been made and the x-ray does not show the presence of submucous burrowing or perforation, and there is no hemorrhage, I do not hesitate to use carefully applied, but fairly sharp, corrective technic. In line with the fact . . . that we have in ulcer a hyperactive vagus with a subnormal sympathetic, the stimulation to the splanchnic region occasioned by corrective treatment should be beneficial. This theory is certainly borne out in practice. The relief from spasm and pain is so marked and immediate that I feel we should strive for a technic which will accomplish it without disturbance to the patient or increase of intraabdominal pressure.

Since pyloric hypertonus may be due to the irritation caused by either gastric or duodenal ulcer, or by inflammation of the gallbladder, the appendix or other abdominal viscera, these tissues must be studied with care and such abnormal conditions as may be found must be treated as is indicated by that study. Reflexes from these viscera, and from other sources, tend to pyloric hypertonus, subnormal control or duodenal regurgitation, and thus to increasing acidity of the gastric contents.

Pyloric hypertension often may be relieved by osteopathic manipulative treatment devoted to relaxation of tense spinal muscles and, in selected cases, to the correction of vertebral, occipital or rib lesions.

Rest is no less important for the patient than for the stomach. Sanitarium or hospital care secures this rest more efficiently than is possible at home. Barker advises rest in bed for not less than four weeks, plus the use of a bland diet. (This period usually is shortened considerably by osteopathic manipulative treatment.) Nervous and emotional strains especially are to be avoided.

A very short modified fast was advised by several members of the organization. During this fasting period, protective substances were advised, such as flaxseed tea (thoroughly strained), agar-agar, mineral oils, and similar substances. Water in which egg white has been dissolved was advised for the relief of discomfort and the absorption of the excessive acid of the gastric contents. After this day (or few days) of modified fasting, a diet of very bland foods was planned, considering the tastes and habits of the patient and the severity and location of the ulcer. This diet included pureed vegetables (the puree being strained through very fine wire or gauze, with every care to avoid the use of old or worn utensils); well-cooked cereals, strained in the same manner, Melba toast made from fine, white bread; custards, milk, soft cream cheese, raw or very soft eggs, cream and cream soups, butter, olive oil, gelatine, agar-agar, and similar substances. Okra, flaxseed tea, emulsified dionol, mineral oils in any pleasant, nonmedicinal preparation and other protective substances were advised for the relief of pain. The temporary relief secured by ulcer patients while undergoing x-ray procedures for diagnosis suggested the use of barium mixtures as protective agencies.

These protective substances are subject to the danger that they might coat the stomach and bowel so thoroughly that absorption would be impeded and the patient's nutrition be seriously affected.

The Sippy treatment was discussed. Its deliberate and excessive alkalinization is not now held in such great esteem as formerly because the dangers of alkalosis are now generally recognized. With suitable modifications, it is useful in selected cases. Calcium carbonate, neutral phosphates, and magnesia may be used instead of the sodium bicarbonate of the original Sippy method, with less danger of disturbing the chemical reactions of the body.

The dangers of alkalosis are increased if renal disease accompanies ulcerative gastritis. Even the basic diets advised by Sansum, Blatherwick, and others may cause alkalosis in patients suffering from any nephropathy. The diet rich in creams and fats, advised by Sippy, was generally approved, except that its affects upon the liver must be watched if very high fatty food-content was used.

PROGNOSIS

The outlook depends upon the pathology in every case. Acute or chronic gastritis with superficial erosions or shallow ulcers should recover completely, usually within a week or a month, according to the severity of the condition and the skill of the osteopathic physician both in planning and giving treatment and in securing the obedience and the cooperation of the patient. It must be remembered that even mild cases may recover, with connective tissue hyperplasia, and that this may, later, disturb the circulation of the blood and further ulceration may occur. (Gastric arteries are terminal and the injury of a single small vessel may leave a small gastric area with deficient blood supply.)

Ulcers due to blood-borne infections heal readily after the infectious focus has been removed, but healing is rather slow and the danger of scar tissue formation is rather marked.

Ulcers due to vasomotor disturbances heal quickly when normal circulation has been reestablished, provided the tissue injury has not been profound.

Ulcers due to scar tissue or to fibrosis which occludes the blood vessels or diminishes their capacity are often resistant to treatment. Surgical intervention often seems necessary, and the prognosis is rather cloudy in these cases.

Recurrent attacks of gastritis or duodenitis are to be expected if the exciting conditions recur or persist. Repeated attacks tend to fibrosis, to increasing severity, and the development of ulcers.

With removal of irritating factors, avoidance of toxemia, fatigue, and emotional strain, correction of vertebral or other lesions, and the maintenance of normal circulation and innervation of the stomach, together with good habits of living, recurrences may be diminished or avoided completely.

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Endometriosis*

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This is a subject which I believe deserves much more consideration than has been accorded it by the profession. Many physicians do not appear to be as familiar with the nature and pathology of the disease as they are with many other conditions of very much less importance. The existence of such a condition is almost unknown to the laity, although from 10 to 20 per cent of all women having laparotomies between the age of 30 years and the age at which the menopause usually begins are suffering from some form of endometriosis.

The disease manifests itself in a number of different forms, but the same primary pathology is present—that is the growth of endometrial tissue in an abnormal location.

1. *Direct or Primary Endometriosis.*—This is known as adenomyoma and is due to the extension of the endometrium into the myometrium. Many times these growths invade a large proportion of the muscular substance of the uterus and produce an enlargement of that organ very much simulating the ordinary fibroid in physical appearance and giving a very similar sensation to the palpating fingers. Profuse menorrhagia always develops when these growths have attained considerable size. A good many of the menorrhagias appearing about the time of the menopause are due to adenomyomata. Since in many instances the patient recovers fairly good health and the growth retrogresses following the menopause, it is commonly believed that menorrhagias are more or less normal to the menopause and that the patient will be well as soon as she has passed this period of life.

2. *Peritoneal or Implantation Endometriosis.*—There has been much discussion as to the true nature and cause of endometriosis in the abdominal and pelvic cavities. However, since the work of Sampson in 1921 most authorities are agreed that implantation occurs as a result of regurgitation of the menstrual flow through the fallopian tube into the peritoneal cavity, carrying with it live cells from the endometrium of the uterus, which find attachment to the covering of the ovaries or other neighboring structures. The fact that most of these implants are found on and about the ovaries tends to confirm this view. These implants, however, sometimes are carried for considerable distances before implanting themselves upon a peritoneal surface, some having been found as far away as the gallbladder.

These implants form adhesions also to other peritoneal surfaces to which they come in contact, thus completely surrounding the endometrial cells. These cells continue to menstruate with each menstrual cycle, the menstrual flow pushing the adhesions farther back and making, often, a good-sized cavity filled with menstrual blood. Sometimes these attain the size of an orange or larger. The absorption and changes taking place in the confined blood cause a sort of brownish-yellow discoloration about the mass and a change in the color of the blood to a chocolate or tarry appearance, hence the mass is often called "chocolate" or "tarry" cyst. These cysts sometimes rupture, causing extravasation of new implants which may be carried to all parts of the pelvis or even higher in the abdomen. These are the cases which give rise to such very extensive adhesions and often give the appearance of a "frozen" pelvis and are sometimes confused with carcinoma or the extensive adhesions of pyosalpinx and pelvic abscesses.

Many of these cases, because of gravity, develop extensive growths in the cul-de-sac and rectovaginal septum and give rise to a very painful pelvis with dyspareunia and extreme pain at menstruation. Peritonial endometriosis is especially apt to develop in the patient with patulous uterine tubes, who at the same time has an obstruction in the uterine or cervical canal, causing a stenosis of the canal and bringing about a backward pressure in the tubes. Flexions of the uterus, stenosis of the cervix, tumors situated low in the uterus (making pressure upon the uterine canal), or any other interference with the normal egress of the menstrual flow are important factors in the causation of the condition. The disease, for these reasons, develops nearly always in patients who have been sterile or at least have not been pregnant for a number of years and usually in the third or fourth decade of life. Accompanying the devlopment of peritoneal endometriosis, therefore, the patient develops an *acquired* dysmenorrhea. She may have been entirely or practically free from pain during her previous menstrual life, but as the implants develop in the pelvic cavity or as adenomyomata develop, there is a gradual increase in the menstrual pain, as each growth menstruates, as does the parent endometrium, with each menstrual cycle.

3. *Transplantation.*—Occasionally endometrial cells are transplanted at operation, especially when the uterine canal is entered as in supra-vaginal hysterectomy or cesarean section, or sometimes in suspension operations when the sutures are carried too deeply and into the uterine cavity. The cells are dropped, usually, in the abdominal wall and these in turn give rise to endometrial growths which behave as do the peritoneal implants, causing much pain at each menstruation and an accumulation of menstrual blood in the incision.

4. *Metastatic.*—There is still considerable discussion as to whether or not metastasis really takes place carrying endometrial cells to other

*Prepared for the Obstetrics and Gynecology section of the Thirty-ninth A.O.A. Convention at Cleveland, 1935.

locations. Sometimes endometrial tumors are found outside the peritoneal cavity, which are difficult to explain except on this basis, and it is very probable that occasionally metastasis actually occurs, most often probably through the uterine veins.

5. *Developmental.*—The appearance of endometrial growths about the broad ligaments or bladder not due to implantation, are doubtless due to misplaced cells in the process of embryological development. The genital epithelium and peritoneum both originate from the celomic mesothelium, the Mullerian ducts form the uterine tubes, uterus and vagina, while the Wolffian body occurs as the paroophoron in the hilus of the ovary, the upper portion forming the parovarium and the lower becomes Gartner's duct lying parallel with the vagina. It is not hard to conceive, therefore, how some of the epithelial cells intended for the endometrium should become misplaced in embryological development.

TREATMENT

Time will not permit discussion of the diagnosis which one can study from any good textbook on the subject, but I do want to emphasize some points in treatment. Since the development of endometriosis and the distressing symptoms accompanying it are dependent upon ovarian activity, it is necessary to take the ovaries into account in the treatment of the disease. This presents a very serious problem when the disease occurs before the patient has reached an age somewhere near the time for normal menopause.

In the adenomyomata, the disease being confined to the uterus, hysterectomy is the ideal procedure. This usually results in cure and the ovaries are left intact.

In peritoneal endometriosis, when there are dense peritoneal adhesions and "chocolate" cysts, judgment must be used as to how extensive a procedure is advisable in dissecting the adhesions and destroying ovarian function, but as a rule it is advisable to drain the cysts, and if the patient is young, leave the bowel and pelvic structures and ovaries in as normal condition as possible. If the patient is near the menopause, the ovaries should be removed and if the uterus is badly damaged, a hysterectomy should be done. The younger the patient the more important it is that ovarian function be preserved, even though another operation may be required later.

Sometimes adhesions produce a mechanical obstruction of the bowel which must be relieved either by removal of the adhesions; or if the sigmoid is the point of obstruction, a colostomy is performed, and at the same time the ovaries are removed. With loss of the ovarian influence, the menstrual activity will cease and the process undergo retrogression, after which the intestinal obstruction may subside and the colostomy can be repaired.

In transplantation endometriosis it is necessary to excise the entire growth, which will result in cure.

In the developmental group, as a rule, the cyst can be removed intact and this is the proper treatment without regard to ovarian function.

The use of x-ray is justified in certain cases, especially of the peritoneal type and especially when the general condition of the patient is not good. A castrating dose should be given. Radium has also been used, but it is not nearly as satisfactory as x-radiance. As a rule, however, surgery is preferable to x-ray or radium and associated with less danger to the patient in the long run, as it must be remembered that the x-ray has no power of selection for diseased tissue and many cases with healthy bowel, bladder or other structures are permanently damaged by x-ray or radium. The fact that endometriosis, especially adenomyoma, is often associated with inflammatory conditions, presents an added danger to the use of radium therapy.

Both the diagnosis and treatment of endometriosis is a difficult problem and since the disease is not uncommon, I feel that it is deserving of much more study and consideration than is usually given.

Southwestern Osteopathic Sanitarium and Hospital.

ELECTION BULLETIN

As this JOURNAL goes to press, word is received from New York City, where the fortieth annual convention of the American Osteopathic Association took place at the Waldorf-Astoria Hotel, July 20 to 24, of the election of the following officers and trustees of this Association:

President, John E. Rogers, Oshkosh, Wis.; First Vice President, Edward A. Ward, Saginaw, Mich.; Second Vice President, Gertrud Helmecke, Cincinnati; Third Vice President, William J. Douglas, Paris, France.

Trustees for three years: Grace R. McMains, Baltimore, re-elected; A. D. Becker, Des Moines, Iowa, re-elected; C. H. Morris, Chicago, re-elected; Frank F. Jones, Macon, Ga., and O. M. Walker, Bloomfield, N. J.

Trustee for one year: Walter E. Bailey, St. Louis, to finish out the unexpired term of Dr. Ward who was elected first vice president.

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JOHN E. ROGERS
Incoming President

THOMAS R. THORBURN
Retiring President

THE NEW YORK CONVENTION

The fortieth annual convention of the American Osteopathic Association came to a close on July 24. It set a new high mark for excellence in many respects. It was housed in the largest, and, what many consider to be, the finest hotel in the world—The Waldorf-Astoria—situated in the heart of the second largest city in the world—New York. This beautiful hotel in this marvelous city was a fitting setting for the osteopathic physicians who gathered here from widely separated parts of the world to renew old friendships, to exchange professional experiences, to conduct clinics, and to honor the memory of Andrew Taylor Still, the founder of osteopathy. The magnificence of the grand ballroom of The Waldorf-Astoria, where the general program took place, was a far cry from the bareness of the schoolhouse where Dr. Still began teaching the first class of osteopathy in 1892. In 44 years osteopathy has grown to be a powerful force in the healing world. It has achieved its present position because it had something to offer to sick people, something that would make them well when other methods of healing failed.

Here at this convention, as at every other national convention in the past, the achievements of osteopathy were demonstrated and new roads of endeavor were opened up for the further development of osteopathic art.

To cover adequately all convention activities and to report accurately the many vital and interesting facts brought forth at these gatherings, would necessitate a staff of reporters numbering in the fifties. One can tell of only a few of the many outstanding activities, but a fuller story of the convention may be found in the next issue of THE FORUM.

The program, formulated under the chairmanship of the genial George W. Riley of New York, was one of the finest ever presented. The scientific exhibit, in the capable hands of Otterbein Dressler of Philadelphia, set a new mark of achievement and grandeur. The athletic conference held on Thursday and opened to the public brought out a large and enthusiastic group of physicians and lay persons. The Board of Trustees and House of Delegates by starting their activities in advance of the regular opening convention date were able to complete the voluminous business of the Association in record time. John E. Rogers of Oshkosh, Wis., was elected President for the ensuing year. An election bulletin naming the other officers and the new trustees may be found on page 573. George M. McCole, Great Falls, Mont., was awarded a Distinguished Service Certificate for his contribution to osteopathic literature.*

To the hard working Public Relations Committee of New York, under the leadership of Helen M. Dunning, goes much of the credit for putting this convention before the eyes and ears of the public. The daily papers carried many stories. There were broadcasts over local stations every day of the convention and on Tuesday and Friday over nation-wide networks.

To the efficient local convention committee of New York we extend our sincere thanks for the most enjoyable and profitable time ever spent at a national convention.

Those who did not attend this convention missed an opportunity of a lifetime. The convention next year will be held in the Windy City. Chicagoans will have to work hard to surpass the excellence of the convention that is now history—and what history!

R. E. D.

*An analysis of the Osteopathic Lesion. George M. McCole, D.O., Publisher, Great Falls, Mont., 1935.

A VALUABLE CONTRIBUTION TO OSTEOPATHIC LITERATURE

A most informative article* from the pen of Frederick A. Long appears in the Scientific Supplement the *Osteopathic Digest* for May. Dr. Long very aptly surveys the important experimental and clinical data established by osteopathic research concerning the relationship between faulty body mechanics and disease, and brings into his thesis the known biological facts that substantiate osteopathic claims. Dr. Long says that the osteopathic joint lesion occupies an important place in any consideration of spinal column mechanics and he describes the physiological processes through which altered joint mechanics can produce local and remote effects.

A full abstract of this article appears in the columns of THE JOURNAL devoted to current osteopathic literature. Some of the important points brought out by Dr. Long in his discussion can well be emphasized here.

After listing the various causes for mechanical embarrassment in joints, he says that "the fundamental factor obtaining in all these conditions is joint motion in other than normal planes." The structural position at rest of the related bones in the lesioned joint or the so-called "fixed" joint does not account for as many of the observed effects as the abnormal movement in the joint (abnormally functioning joint surfaces). In a series of x-ray studies made by P. T. Lloyd and Dr. Long of clinical subjects who had osteopathic lesions, none of them exhibited a lesioned joint in which there was no motion. There are many advantages to considering mechanical abnormalities of joints in this light. One of these is that explanations based on this concept may include the spinal joint lesion without excluding states in which remote effects are probably induced without any or great local pathological reaction (as in faulty posture).

In discussing the changes that occur locally when a joint is lesioned, Dr. Long says that "the newer investigations into capillary physiology and water balance indicate that there are many early reactions to be considered which might not reach the stages of acute inflammation, but which should still be considered a part of the reaction of inflammation." These early changes are chiefly disturbances in water balance (edema) and altered chemistry (acidosis).

Research work in the past has been limited by failure to recognize the effects both locally and in remote tissues of early changes in the joint tissues as a result of lesion. It has been established that remote effects take place at about the same time as local effects. Therefore, it becomes apparent that the early changes are responsible while the gross manifestations of the reaction of inflammation have the role of prolonging and maintaining the effects. Long proceeds to describe the mechanism whereby the vegetative nervous system is influenced in its function of regulating tissue tension and cellular chemism. He says that "it is in the recognition of, and application of therapy to these early tissue changes, which probably involve circulatory, chemical and water balance changes, that offers the greatest field in preventive medicine, for it is in these early stages that the beginning of disease rests. And it is largely because osteopathic manipulative treament offers a logical approach to these early changes as well as to later ones that it is truly an advancement in preventive endeavor."

There are many other interesting facts in this article of Dr. Long's that would bear repeating and emphasizing if space permitted, which it does not. But one particularly interesting bit of information deserves mention. It has to do with the oft-debated question as to whether or not actual pressure on a nerve fiber either by tissue under tension or structurally altered, or by edema, can produce the effects commonly observed when an osteopathic joint lesion exists. He says that "when a section of nerve fiber is subjected to forces that depress its conductivity (narcosis or pressure) it has been found that when the impulse has passed the depressed section of the fiber it regains its former strength. . . . Accordingly, the only circumstances under which depressed activity could be brought about as a result of pressure factors operating on one section of nerve fiber passing through an involved spinal area would be those in which the pressure were sufficient to completely prevent the passage of impulses so that no adequate stimulus could reach the distal unaffected portion of the fiber. That pressure to this extent actually exists in the spinal lesion or other spinal alterations of a like nature has yet to be proved. . . . It is probably not, then, upon the fiber that the pressure present in the spinal area produces its maximum effect, but upon the *cell body* and *synapse*. Pressure sufficient to reduce the nutrition and alter the chemical environment of the nerve cell could thereby affect the conductivity of the entire neurone by decreasing its level of maximum response." (Italics ours.)

The osteopathic physician as well as the osteopathic student will discover food for thought in this splendid article. It should be read slowly and carefully for one to gain the full significance of the many fine points brought out by Dr. Long. Furthermore, a diligent study of this article should place one in a position to answer challenges on the part of our contemporaries as to the soundness of the osteopathic theory and practice.

R.E.D.

*Long, Frederick A.: A Survey of Some of the Mechanisms and Processes Through Which Abnormal Spinal Mechanics Can Produce Local and Remote Effects. Osteopathic Digest, 1936 (May) 1:13-19.

LET'S GO AFTER THE NONMEMBER

We have a source of available revenue lying fallow at our very door, free from the disadvantages of cutthroat competition, of no value to anybody but ourselves, available at practically no expense, and ready for the harvest. I refer to our 4,500 osteopathic physicians who are not members of our national association but who are enjoying the benefits and the security acquired through the efforts of our active membership—which, to our shame be it said was too long a minority of the profession. This resource—activated—can furnish the needed revenues that will assure the additional funds for further expansion. The reaping of this harvest depends in very large part upon district or local societies and their members.

Now what is the relationship of the district society to the national organization? Exactly the same as that of the general practitioner to the specialist. The district society is the organization that is on the firing line, so to speak, in the battle for therapeutic supremacy. It is the society that first contacts the individual practitioners, that senses their needs and, knowing the environmental conditions under which they are functioning, is in an advantageous position to outline the means for relief. In the event that conditions arise beyond the ability of the district society to handle, then the divisional (state or provincial) organization, in the nature of a consultant, is ready to step in and assist. Should the problem be one for the specialist to handle, then the national organization is in the position to assume that role and to supply the needed aid. The general practitioner, the friendly consultant and the specialist are all necessary in proper time and place for the safety of the patient which is, in this case, osteopathy.

The general welfare of osteopathy as a profession requires primarily specialistic service. The Central organization is one of supreme importance to the body politic of osteopathy. It must be supported wholeheartedly and generously. The number of its supporters must be increased and a genuine concern manifested among them relative to its future welfare. The general man must visualize himself as an important cog in the wheel of the National organization and must act accordingly.

The district society comes into intimate contact with the individual practitioners of osteopathy no matter what their professional status. The district society knows them, is in a position to contact them quickly and easily, and is cognizant of their standing professionally as well as their ability financially. This being true, the problem of upbuilding the Central organization, the specialist if you please, upon whom each member must depend in the last analysis, lies with the district society. It is here that the most effective work in the securing of nonmembers is possible.

The district executives can list the nonmembers, can apportion them to interested active members (who are most effective when operating in pairs), who can see them personally (which is most important) and can keep after them consistently until they yield. Personal solicitation, personal contact, is imperative. Phone solicitation and personal letters are of little or no practical value. There is just one way, and that is to go after them and get them. It can be done and easily too, in the same way that a presidential election was won once by concentrating on a state that was doubtful as well as pivotal. An astute campaign manager conceived the idea of making "key men" in the state responsible for supervision of six voters each. Each key man's entire efforts were to be expended upon his six men. The plan was put into effect, the election in that state was assured, the president was elected and the famous "blocks of six" campaign went down in political history.

This same idea is applicable to district society initiative. Each district in every state, sensing its obligation to the national, and recognizing the opportunity for service, could quickly transform the whole scheme of our professional policy into one of widespread constructive activity. The time is at hand when this very action must be taken. In a few months the various state legislatures will convene and we can expect a vigorous onslaught by the powers of organized medicine to curtail osteopathic activity and progress. The national organization must be in the best condition possible so that it may render its specialistic service quickly and generously. The time has long since passed when the state is competent to care for all its legislative problems without the advice and assistance of skilled help. It is an obligation of the national to help, but it can be in a position to render effective service only as a result of the advantages to be derived from a marked increase in its members. Now is the time to prepare for that emergency which will come when most of the legislatures meet—a foretaste of which we had in the comparatively few legislatures which met this year.

Two thousand new members is the minimum of safety. More than that will serve as accident insurance to the general cause. District society workers, by concentrating on their respective nonmembers, can turn the trick.

"Pat" Gordon, D.O., President of the Iowa Osteopathic Association, is chairman of the Committee on Special Membership Effort of the A.O.A. I am very sure that he will welcome the aid the district organization can give him—in fact such organizations can, if they will, make his chairmanship a bed of roses. What is the answer?

GEO. J. CONLEY, D.O.

Department of Public Affairs

E. A. WARD
Chairman
Saginaw, Mich

LEGAL AND LEGISLATIVE

A. G. CHAPPELL
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Legislative Adviser in State Affairs

California Opens Way for Osteopathic Drugless Practitioners to Get Physicians and Surgeons Certificates

Carle H. Phinney, President of the College of Osteopathic Physicians and Surgeons, reports that the osteopathic examining board in California adopted a rule on June 30 which will open the door for securing physicians and surgeons certificates to some osteopathic physicians licensed as drugless practitioners who could not, until now, so qualify.

It has ruled that all osteopathic physicians holding drugless certificates in California, whether secured by reciprocity or examination, should be admitted for examination for a physicians and surgeons certificate provided:

1. That the applicant had the necessary preprofessional qualifications.
2. That he had met the requirements of Section 10 of the California Medical Practice Act.
3. That in so doing he had attended one trimester of resident work in the College of Osteopathic Physicians and Surgeons with satisfactory attendance record and satisfactory scholastic grade.

Section 10 of the law outlines the course of duty which must be completed for a physicians and surgeons certificate, including at least 4,000 hours and setting in minimum number of hours in each of certain branches.

Diagnosis and Treatment

ABNORMAL ANTERIOR POSITION OF THE FIFTH LUMBAR VERTEBRA*

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Chicago

The line of weight-bearing normally falls posterior to the middle of the fifth lumbar vertebral body and anterior to the facets. Any change in weight-bearing factors that brings most of the weight at or posterior to the lumbosacral facets causes compression of the posterior portion of the intervertebral disc between the fifth lumbar vertebra and the sacrum. There are circulatory changes and thinning of the disc, with the facets being forced to carry more and more of the superimposed weight and with the fifth lumbar vertebra eventually sliding anteriorly.

Anterior fifth lumbar, when present, is associated with so many other conditions that it is difficult to determine definitely which are causative and which are secondary changes. Excess weight, faulty posture, short lower extremity, twisted pelvis, lumbar joint lesions, posterior condition at lumbodorsal junction, often are associated conditions that have to be considered. Any one of these conditions may cause a shift in weight-bearing through this articulation.

A predisposing factor may be the direction of the facings of one or both lumbosacral facets in a more anteroposterior plane than normal, thus favoring anterior movement of the fifth lumbar vertebra.

These patients are seen in various stages of development of this condition. We should attempt to recognize it early and avoid, if we can, the development of the more typical changes (spondylolisthesis), when it may be too late to do very much about it.

The lumbosacral disc seems to be the first structure involved. The wedging process begins by pinching of the posterior portion, then gradual thinning of the entire disc takes place. The facets, as they carry more and more weight, are gradually moulded, the mamillary processes, to which they are attached, gradually becoming larger in an attempt to carry weight. In the later stages, the body of the fifth vertebra becomes wedge-shaped. Along with these changes, hypertrophic deposits may be noticed on margins of adjacent vertebral bodies, especially along attachment of the anterior common ligament.

Symptomatology.—The symptoms are quite varied, since the condition usually is associated with some rotation of the fifth lumbar vertebra; the pelvis is tilted, the lordosis and stress coming particularly at the lumbodorsal junction, changing especially the anteroposterior curve.

The patient complains of constant deep-seated pain quite low in the back, and when requested to point out the pain he usually will place his hand over the region of the fifth lumbar vertebra. This pain is constant, whether sitting or standing, and often is aggravated by backward bending. He may or may not secure relief after lying down.

There may be pain referred to the gluteal muscles (one or both sides), posterior portion of the thigh, and posterolateral surface of the leg. A sense of weakness or instability in the knees may be one of the symptoms given by certain patients.

Functions of the bladder and rectum may suffer interference. There may be the sensation of incomplete emptying. This condition may contribute also to severe dysmenorrhea.

Diagnosis.—Diagnosis of anterior fifth lumbar or spondylolisthesis may be established definitely by means of lateral x-ray pictures taken through the lumbosacral region. In the absence of x-ray, symptoms may give a clue. On examination of the patient, palpation usually will elicit pain directly over the spinous process of the fifth lumbar vertebra, and immediately lateral to it. The spinous process seems buried, to the touch, and is difficult to locate, because of its anterior position. With the patient on his side, knees drawn well up toward the abdomen, the spinous process of the fifth lumbar does not come out well in line with the other lumbar vertebrae.

In a well-advanced case the patient has a peculiar "duck-waddling" gait. The sacrum is prominent, with a transverse hollow immediately above it. Lumbar lordosis is present. The ribs closely approximate the iliac crests.

Manipulative Treatment.—Before beginning treatment, the cause of the condition should have been determined, if possible, and corrective measures instituted while manipulative treatment is directed to the anterior fifth lumbar.

The intent of the manipulative treatment is to separate facets between the fifth lumbar vertebra and the sacrum, and to bring the fifth lumbar vertebra backward in relation to the sacrum. Depending upon the existing pathology, oftentimes this cannot be done at once, but must be repeated a variable number of times.

It is usually advisable to loosen the lumbosacral joint as much as possible before applying specific manipulative technic. Various methods for doing this are well known and need not be repeated here. The technic

*Delivered before the Technic Section at the Thirty-Ninth A.O.A. Convention, Cleveland, 1935.

for bringing the fifth lumbar vertebra back on the sacrum is as follows:

Patient seated erect on stool, arms loosely folded. Operator behind patient, foot on rung of stool, knee applied carefully through pillow to *top of sacrum* (and keep it there). Patient is asked to bow his back inward and to lean forward, thus the ischial tuberosities are applied to top of stool. Knee of operator on sacrum fixes sacrum through ischii to stool and pelvis is maintained in this position with a downward forward pressure of operator's knee.

Operator reaches his arms around patient's chest under axillae, spreading and locking his fingers over the anterior chest wall. Body of patient is then gradually *lifted* until operator feels patient's weight has been lifted down *to* operator's knee. Patient is then gradually brought backwards, maintaining lifting tension down through fifth lumbar, until operator can feel that tension has accumulated at the joint, pressure of operator's knee all the while maintaining fixation of pelvis to stool. Then upward traction is exerted upon body of patient, and counterforce exerted by downward and forward pressure through knee to sacrum. At this point operator can feel that force has accumulated just above his knee and that the patient is fixed in this position. (Caution: Patient's weight is kept pretty well over his pelvis all the time, thus avoiding too great backward bending.) Then accentuation of both forces can be made to extent deemed necessary by operator. Thus he has separated sacrum and fifth, and as tension accumulates, the fifth is lifted and dragged back upon the sacrum.

1305 E. 63rd St.

ATHLETICS AND ACUTE INJURIES SECTION

JAMES M. EATON
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UNSUSPECTED FRACTURES*

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It is possible for a fracture to go unrecognized, but there is no excuse for the classification, unsuspected fracture. Undoubtedly, there will arise in any practice instances in which the possibility of fracture seems remote, yet it is not fair to the patient to err on the side of hopefulness. Rather the question should be: "Well now, how did this person possibly get through that injury without breaking something?"

The apparent severity of some injuries that result in slight or inconsequential damage should not lead us to consider that a powerful force is necessary to produce fractures. Many times a simple, ordinary movement is sufficient to disrupt the integrity of bone.

Gross fractures that are compound, or those that present deformity, are unlikely to be free from suspicion at any time. These, then, may be omitted in this discussion. Fractures that are prone to escape the attention of the examiner are complete fractures without displacement, impacted fractures, and incomplete breaks. Those injuries in which there is separation of the tendon insertions should also be included. In many instances the symptoms of any of the conditions may be vague, and unless a careful examination is made, the fracture may be missed entirely.

The importance of a fracture lies in the possibility of its effect on the usefulness of a part or member, if it does not heal properly. Let us consider, briefly, the pathology of fracture and some of the factors influencing its healing.

*Delivered before the Athletics and Acute Injuries Section of the Thirty-Ninth A.O.A. Convention, Cleveland, 1935.

With a solution of the continuity of the bone, there is the injury not only to the bone, but also the periosteum, the endosteum, and the soft tissues adjacent to the site of injury. Blood and lymph vessels are ruptured, small nerve fibers are torn, the tissues become infiltrated and engorged with blood, lymph, and inflammatory exudate. This increases the tension in the tissues and is responsible not only for the pain and swelling, but also for a further upset of the normal circulatory balance. Any unnecessary strain on the part, either from continued use or rough handling, tends to increase the circulatory deficiency. In the injury, the trauma is sufficient, usually, to kill some of the cells of the bone and soft tissues. These dead cells produce ferments, which care for the debris. The process of infiltration reaches its height in about twelve hours, after which time the pressure of the swelling tends to produce an actual edema to the site. With the clotting of the blood and exudation, there is left the edematous fluid, which, if in excess, will tend to delay the healing of the bone, especially through its hindrance of the formation of fibrin. The organization of the clot that forms about the site of fracture is started in about forty-eight hours. Organization of the callus occurs in about 9 days.[1]

The actual mechanism whereby the calcium becomes deposited at the fracture site is unknown. There is demonstrable, however, an absorption of the bone adjacent to the fracture, which amounts to an actual thinning of the structure. With the institution of the steps of repair, this is soon cared for by an excessive deposition of callus at the site of the injury and extending sufficiently to form an excessive amount of soft osteogenic tissue. With the deposition of calcium in this mass of tissue, organization is started. This has been observed as early as seventy-two hours[2] after the injury, although it is usual that the callus becomes organized about the ninth day. Under the most favorable conditions, the bone is healed by the twenty-eighth day. This does not apply to any fracture any place in the body, of course. The site of the fracture, the severity of the injury, the demands that are to be made on the bone, determine the length of time required for the healing. In some instances this may need be only three weeks, in others, three months.

The danger in an overlooked fracture lies in the fact that not only may it cause pain and dysfunction, but also, due to the irritation from use, there may result an exaggeration of the process of absorption about the site, which will so weaken the bone that it is unable to support any weight at all.

The process whereby nonunion or fibrous union occurs is also important in the consideration of fractures, whether they are recognized or not. With the interposition of muscle, healing is at least delayed if not impossible. Lack of immobilization for a sufficient length of time may tear down what organization has occurred. The presence of a constitutional condition that will influence the utilization of calcium and other substances necessary for the healing, may also result in a disturbance of the normal processes of repair.

It is always best to examine the part by x-ray after what seems to be the proper time for immobilization has elapsed. By this procedure the amount of callus can be determined. Its appearance on the film is that of a substance hanging over the edges of the fracture, of a density greater than that of the adjacent soft tissues, but less than that of bone.

The explanation for the existence of unsuspected fractures lies for the most part in the tendency of all people to consider themselves as "Jacks of all trades." The ordinary layman likes to consider himself as an ama-

teur physician and capable of caring for the smaller troubles that beset the human body. This desire results in the formulation of some simple diagnostic aids that he considers infallible. In the field of gastrointestinal conditions, as an example, with the aid of advertisements, bowel function is cared for by the individual himself. This has a two-fold result. The first is a "land office" business for the various manufacturers of gastrointestinal remedies, and sooner or later a stubborn case of constipation for some doctor to struggle with. Home doctors, whether in the flesh or in printed form, play an important part in the health of almost everyone. Grandmother's remedies, the salve that the doctor gave Johnny for a condition that was "just like this" sometimes helps, sometimes hinders. There is no question that much of the therapy of today has been based on a trial and error system, but the trials should be made by someone familiar with the possible results.

The tendency of people to consider themselves capable of caring for the ailments of the body extends to the field of injuries with its naturally hidden possibilities of fractures. The lamentable part of this field is that in some instances the maxims of the laymen are carried over into the armamentarium of the physician. A common test to John Doe to determine the presence of a fracture is to see if the part can be used. "If you can use it, it is not broken."

A few case histories from some "just to be sure" x-rays will serve to emphasize the point that not only is the judgment of the patient in regard to injuries sometimes bad, but also that of the physician. It is not the intent of the writer to lay bare the mistakes of others. Rather it is to emphasize the importance of a careful and painstaking examination of every injury, no matter how trivial. The tendency of the doctor and patient to consider the expense of an x-ray and the inconvenience of a cast or splint as too exorbitant a price to pay for such a slight injury is many times disastrous.

CASE HISTORIES

Case 1.—Male, aged 21, basketball player. Patient remembers that before the game he took a practice throw at the basket. While dragging the right foot and lifting his weight onto the left toes, he remembered feeling something slip in the middle of his left foot. There was no pain. He played a full game of basketball as center. After the shower following the game, difficulty was noticed in getting the foot into the shoe. At no time was there any pain in the foot, until the next morning when, on awakening, weight was borne on it. An x-ray picture revealed a fracture of the proximal portion of the fourth metatarsal.

Case 2.—Male, aged 60. While playing golf, in the midst of a drive, patient's foot slipped and he fell, turning his right ankle. He was helped back to the clubhouse and taken home. The foot was massaged and cold applied to it. The next morning the foot was swollen, especially about the ankle, but the patient was able to hobble around on it. Two days after the injury he decided to consult a physician, who ordered an x-ray. A complete fracture of the fibula was found.

Case 3.—Girl, aged 8. While playing in the cellar, she fell with legs spread beneath her. She cried and complained of pain in her right leg. Her father carried her upstairs and put her to bed. She refused to get out of bed. Two days later the father ran into a doctor on the street and asked him what he would suggest for his daughter. On the suggestion that the part should be filmed, at least, the child was taken on a street car about 7 miles to a laboratory. The film showed a complete

Case 4.—Boy, aged 16. Patient fell on his right hip spiral fracture of the middle of the femoral shaft.

and although soreness developed he was still able to walk. This soreness had just about cleared up, when, six months later, he fell on it again. This time he was unable to walk or even to stand on the injured part. A physician was called and a so-called dislocated hip set. After about two weeks of bed rest, with little improvement in the hip, the patient was brought in for an x-ray. There was demonstrated a fracture dislocation of the epiphysis of the head of the femur.

Case 5.—Female, aged 45. Patient fell while ascending some stairs to her home, at night. Her right hip hurt, but she was able to crawl into the house and onto a divan. Her sister called a doctor who examined her and told her to use some liniment and get up the next morning. She called another physician. It was suggested that an x-ray be taken in the home. The film showed an intertrochanteric fracture of the femur.

Case 6.—Female, aged 31. Patient slipped and fell down three stairs, landing on the end of her spine. Walking was painful and the legs were numb, so she stayed in bed to get well enough to so see the doctor. Three weeks after the accident an x-ray picture was taken and a fracture of the sacrum was found.

Case 7.—Male, aged 42. Patient entered the hospital complaining of severe intermittent pain in the low back, severe enough to cause him to cry out. This started after he fell on his back, trying to catch his mother who was falling. Patient was unconscious for a few seconds. An x-ray was taken, but no fracture of recent date was demonstrated. A Balkan frame and sling were applied to relieve the tension on the site of a probable old fracture, recently injured (patient gave a history of having fallen and hurt the middle of his back when he was a youngster). The sling and frame increased the muscle spasm in the back, so it was discontinued. The patient was treated daily and in two weeks' time left the hospital, symptom free. However, his activity was limited. After a month, by gradually increasing his walking, he was able to do a mile with only a "tired feeling" resulting. The x-ray at this time revealed a decrease in the width of the body of the twelfth dorsal segment. What appeared to be an injury to an old fracture may have been a new fracture somewhere within the body of the vertebra, as many of them are.

Case 8.—Boy, aged 16. Patient hurt his shoulder in a football game. The coach determined that as long as he could lift his hand over his head, the shoulder was just bruised. Fractures of the acromion, corocoid, and clavicle were found.

Case 9.—Female, aged 33. Patient hurt her wrist a year ago, but as it did not bother her much, she paid no attention to it. Recently she hurt it again and since then it has bothered her considerably. Fracture through the distal fragment of an old ununited fracture of the navicular was found.

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Treatment for Joint Adhesions

In the absence of arthritis or tuberculosis, free manipulation and breaking up of the adhesions under an anesthetic (nitrous oxide) is of great value. These patients are often promptly cured by the manipulations of a "bone-setter" or osteopath.—A Textbook of Surgery by W. Wayne Babcock. W. B. Saunders Company, Philadelphia, 1935.

American Osteopathic Society of Ophthalmology and Otolaryngology

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DIAGNOSIS AND TREATMENT OF SINUSITIS OF THE ANTERIOR GROUP OF SINUSES*

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When one reviews the current literature on sinusitis, he realizes that not much is really known about the subject. However, in view of the type of medicine practiced long ago, the modern doctor ought to be glad he is living today and not 50 years ago. Indeed, he might wish he could live 50 years hence to see how physicians handle cases like those he fails on now.

It has been said that medicine as taught and practiced today compares with the knowledge and practice of 50 years ago as day compares with night. Clarence Darrow puts it even stronger. He says, "The world is all right and I would not trade it for 50 years ago for anything." He says further, "Medicine as practiced 50 years ago was nothing but black art."

In spite of our increased knowledge and skill, it does not seem that there is much in the medical literature that can be relied upon, not only that acquired during the past 50 years, but of all time. Arthur W. Proetz, M.D., in his book,† which was awarded the Casselberry prize in 1931, says: "There are many exceedingly elementary matters about sinuses of which we know very little. To begin with, we do not know why they exist at all. We do not know exactly why they are normally sterile and why they presently become infected. We do not know why once infected they may readily recover, or why just as often they do not." This is a pretty broad admission of ignorance to make when he follows it up by writing a book on the subject.

My discussion of sinusitis will be confined to the anterior group of the accessory sinuses, which are named: the frontal, maxillary, and anterior ethmoidal.

Sinusitis is not often an independent disease, but it is almost always started by some other disease affecting the nose and passing into the sinus, or it may be started by obstruction to sinus breathing or ventilation. When ventilation is stopped, the air space within the sinus cavity becomes "dead." Inflammation begins, followed by atrophy or turgescence—dry or moist—approaching in effect arterial of venous stasis and even gangrene.

Therefore, because sinusitis is usually secondary, and usually easy to diagnose, the primary trouble or etiology should be given the most attention. When obstruction to the air passage or to sinus drainage is the cause, it is usually found in the nose, as a result of growths, deformities, or adhesions. When there is interference with circulation of blood and lymph in the nose and sinuses, upper thoracic or cervical osteopathic lesions usually are the cause. When there is disease of other structures, such as tonsils, adenoids, abdominal and pelvic organs, infection of the sinuses may come from an infected lymph or blood stream. Indeed it is no longer doubted that this type of infection is carried to all parts of the body.

The most usual symptoms of sinusitis are those of pressure and pain in the sinus involved and obstruction to air passage. Transillumination in a dark room and the use of the x-ray by the displacement method usually clinches the diagnosis.

*Delivered before the E.E.N.T. Section of the Thirty-Ninth A.O.A. Convention, Cleveland, 1935.

†Proetz, Arthur Walter: The Displacement Method of Sinus Diagnosis and Treatment. Annals Publishing Company, St. Louis, 1931.

Since the maxillary sinus is often involved, I shall discuss the intranasal technic which may be used to clear up inflammation in this sinus..

The most important thing to do, first, is to reestablish drainage, as most cases of maxillary sinusitis, if not of too long standing, will clear up with the establishment of drainage, which brings about improved ventilation. The methods used a few decades ago to accomplish this were varied and many. But about the first procedure that doctors attempted was to pass a probe or cannula through the natural opening. Another procedure was to remove the anterior one-third of the middle turbinate under which the ostium of the maxillary sinus opens. If this accomplished the desired result, that was as far as the ear, nose, and throat specialist went, but if this procedure did not cause the sinus to drain, then the physician endeavored to open the blocked ostium or enlarge it. This gave temporary relief, but almost always left a troublesome sinus.

A later method consisted of establishing drainage by puncturing the sinus near its floor through the nasal wall under the lower turbinate. This technic did not prove any better than the middle turbinate operation, because the opening, as a rule, did not stay open long enough to eliminate infection in the sinus, and I believe successive openings only made matters worse.

Considering the anatomy of the sinus, it is a fact that the sinus lining contains very little lymphoid tissue. It is therefore a poor medium for bacteria. Also since the sinus is fairly well protected from bacterial invasion externally, it is not susceptible usually to primary infection. In that respect, it is like the urinary bladder, the thyroid gland, heart, teeth, and mammary glands. They do not become inflamed or infected until inoculated repeatedly over a long period from contaminated blood or lymph. It may therefore be stated that if the original source of the bacteria elsewhere in the body is finally eliminated, the sinus lining membrane, like the other tissues named, will overcome the infection.

It is astonishing how few body tissues are really primary culture stations. Those that may be considered as such are found in Waldeyer's ring, i.e., that ring of lymphoid tissue formed by the lingual, pharyngeal, and faucial tonsils. I believe that after all has been said and done concerning these tissues, we are just beginning to appreciate the extent of their detrimental effects on other tissues of the body. I might add here, by way of warning, that the infected tubal tonsil, if neglected, is just as vicious in its toxic effect on the system as either faucial or pharyngeal (adenoid) tonsils.

I have practically abandoned any method of forcefully opening the sinus or entering the sinus to establish ventilation, drainage and antisepsis until I have exhausted every means to reconstruct the passages of the nose and have removed infection from Waldeyer's ring.

I think the idea of removing the anterior one-third of the middle turbinate was simply to clear obstruction from the mouths of the ostii of the sinuses and I believe that principle was right. However, to accomplish this purpose, I do not believe such a radical procedure as removing the turbinate is necessary. Most practitioners have had patients complain of bad effects from this operation.

I believe to clear or reconstruct the space back of the middle turbinate is all that is necessary in a great majority of cases to relieve most of the maxillary sinus trouble. However, sometimes we find it necessary to do a submucous resection to remove a crowding spur or bent septum from the turbinate. The obstructions back of the turbinate may be adhesions or granular tissue, polypi, or a hypertrophied mucous membrane.

Under the anterior one-third of the middle turbinate, there are openings from three or four sinuses such as

the anterior, the maxillary, and one or more anterior ethmoidal cells. The mouth or ostium of each duct contains a certain amount of lymphoid erectile tissue. Under many conditions all the anterior group of sinuses could be blocked by trouble in any one of them. That is, the swelling of one ostium could block the ventilation and drainage of all the others.

To clear and reconstruct this region is the problem. To accomplish this, I pass a small metal finger or blunt curet of the proper shape and size under and back of the turbinate. In mild cases this may be done under a topical anesthesia. The number of treatments necessary depends on the severity of the case. However, where much obstruction is present, especially adhesions, it is necessary to use a short general anesthesia such as may be accomplished with Soemnoform. Four or five pairs of different sized blunt curets should be on hand, because the space in some patients is two or three times as large and deep as in others. Also, the instruments for operation should be heavier and stronger than those used for treatments after operation or those used under local anesthesia. The simplicity of instruments and their application appeals to me. Also the good results on such a high percentage of cases are very gratifying.

I wish to discuss this method of normalizing or clearing space back of the middle turbinate because not much is written about it. The instruments have been remodeled several times as to shape and size and still can be improved. The technic of the application of instruments is constantly being refined as I learn to adapt them to different conditions.

Often a few applications of this technic will permanently relieve severe headache by establishing ventilation and drainage in sinuses that have had more radical operations with little or no improvement.

This technic secures much better results for me in the chronically infected middle turbinate cases than does either ionization or coagulation by the electric needle. It causes relatively little scar tissue formation and leaves the turbinate normal.

This chronically infected middle turbinate, when considerable turgescence is present, has a blocking effect on the ostium of the maxillary sinus as well as obstructing drainage to its own infected cells. It is very enlightening to learn that these cells in the middle turbinate have their openings on the back of the turbinate and therefore constitute one more difficulty and one more reason for more attention being given to clearing this space.

The many different kinds of operations and treatments which have been applied to this middle turbinate are almost as varied (and also as futile) as those directed at the maxillary sinus.

The early treatment was removal of the anterior one-third. Next came ionization by galvanic current and coagulation by the electric needle. A later method was to break the turbinate at its attachment to the side of the nose. Sometimes this was done by crushing it outward to the side of the nose and at other times breaking it inward toward the septum.

These many different kinds of treatment in recent days indicate that we have not found the correct treatment for the swollen, troublesome middle turbinate. The ideal thing to do is to remove infection and turgescence of the turbinate, thereby removing pressure of this body from the picture and also leaving a normal turbinate for protection to sinus ostia in this same area. Practically all the work of the doctor directed at this turbinate is for the relief of sinuitis.

The summation of this paper is simply this: The cause of sinuitis is positive, not negative. It is an active, living agent that will tear down a normal system if not interferred with, rather than being a devitalized system unable to cope with normal conditions. If sinuitis does not respond to the necessary operations and treatments confined to nose and throat, it is necessary to locate and remove the active agent or focus of infection elsewhere in the body which can be perpetuating sinuitis. Failure to do this can render futile any operation or treatment including simple or radical operation on the sinus by the most skillful. I make a plea that the abnormalities in the vicious circle back of the causes of middle turbinate and maxillary sinus disorders be given more careful consideration, and I offer a technic for reconstructing this area that seems to get very satisfactory results.

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RECTAL ABSCESSES*

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Rectal abscesses, together with their sequelae—fistulae—constitute about 25 per cent of rectal affections. No age is exempt, but the majority of rectal abscesses are encountered in adults between 20 and 45 years of age.

Etiology.—Some of the predisposing causes are: sedentary occupations, exposure, constipation, low vitality, wasting diseases, diabetes, tuberculosis, stricture, obstructive cancer—in fact any condition which lowers the vitality of the tissues in this region. Some of the exciting or direct causes are: infection entering through an open sore, fissure, ulcerated torn crypt; injury, abrasion, or tear of the tissues produced by constipation, a kick, falls, insertion of enema tips, instruments, foreign bodies; and unhealed rectal incisions. Also, infection may gain entrance through the hair follicles and sebaceous glands of the perianal skin; through extension of infection from the urethra, prostate, and seminal vesicles in the male, from the pelvis and vaginal structures in the female; from infection of pilonidal sinuses, and through metastatic infection from some other part of the body.

Pathology.—The infection usually travels by direct extension through the loose, areolar tissue in this region, which is abundantly supplied with blood vessels and lymphatics, or through the lymphatics, causing a destruction of tissue and a circumscribed inflammation and abscess. The pus burrows in the direction of least resistance.

Quoting from Drueck:[1] "The rectum at all times harbors hordes of infective microorganisms, and the process of osmosis from the rectum certainly absorbs their toxins, while doubtless at times the germs themselves pass through the rectal wall by way of lymphatics. It is a common thing in making rectal examinations to find sensitive points on one side or other of the rectum when there is no apparent intrarectal lesion. Sometimes it is difficult to differentiate between muscular rigidity and tissue congestion. In still other instances the invasion is greater and the infection is diffuse or circumscribed and may end in abscess. This fatty areolar tissue is the least resistant of the body structures. The fat globules apparently [make] the best nutrient media for microorganisms (the colon and tubercle bacilli and the pyogenic cocci), and they soon fill the acini instead of the fat cell." (p. 19)

Recurrent Rectal Abscesses.—When a patient has recurrent rectal abscesses in the same region after

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giving what we consider the proper treatment, the first thing that occurs to us is that there is an internal opening that we failed to find. This may not always be the case. Referring again to Drueck,[1] we quote the following:

"It is a common experience that individuals who have suffered perirectal infections and fistulae are sometimes subject to recurrence of acute inflammation for considerable periods after their apparent complete healing. This principle was emphasized by experience with wounds during the war. It was learned there, that corrective and cosmetic operations on scars of battle wounds that had been originally infected were very apt to relight the previous activity of the infection, sometimes with disastrous results. Accordingly, it became a generally accepted rule to postpone any such contemplated improvement in scars for a period of at least a year after the final healing of the original wound.

"About the anus recurrent abscesses may develop in tissues that were formerly operated on but which have apparently completely returned to normal in that interval. One must consider several possibilities in an attempt to reach an explanation of these facts. In the first place, it may be a mere coincident that an abscess should pick out for its *locus* the scar of the former operation, just as an abscess may occur from various causes in any other portion of the body. This explanation is mentioned merely to include all the possible theories to account for such occurrences. It will not impress many as being highly probable. The second and a much weightier explanation is, that scar tissue anywhere is a less resistant structure than normal tissue to the development of infection, and that this recurrent abscess may not be in the strict sense recurrent; in other words a new infection may select scar tissue because of the known susceptibility of scar injury of any sort.

"A third conception is that the tissues harbor in the site of the scar a persistent contamination with living organism during all the period of apparent quiescence. During this period the virulence of the bacteria is so feeble and the general and local health of the tissues is so good, that a condition of balance is maintained, permitting the organisms to remain alive and presumably to multiply sufficiently just to sustain themselves, but on the other hand keeping them in such check that they are unable to cause any clinical symptoms of trouble. Then for some reason this balance is disturbed. This reason may conceivably include a great many possibilities concerning the local or general health of the tissues or the virulence of the organism. As a result of the disturbance, the bacteria take on renewed activity, become sufficiently virulent to give rise to acute inflammatory changes, and the clinical development of an abscess results. It would be unnecessary to attempt a detailed consideration of all the possible occurrences that may cause the balance to be upset: One at once thinks of general illness that lowers the health of the patient, of local injuries to the scar, and of changes in the body chemistry disturbing the intricate system of resistance to infection.

"The point we wish to emphasize is that tissues once infected may harbor for a surprisingly long period organisms still potentially virulent, and that for years afterward renewed suppuration may take place." (pp. 7-9)

Symptoms.—There may be constitutional disturbances or the symptoms may be entirely local. There may or may not be a definite chill, followed by fever, leucocytosis, headache, malaise, and albuminuria. The local symptoms are pain, swelling, redness, bowel and bladder disturbances. Symptoms vary to some extent with the type and location of the abscess, which will be mentioned later. The neighboring lymph glands are usually involved.

Treatment.—The treatment that applies in general to all rectal abscesses is free incision and drainage. Hot fomentations may be used at the onset, but the abscess should be opened and drained as soon as the diagnosis is definitely made. Under general anesthesia of ethyl chloride, I make an incision as long as the widest part of the abscess cavity (an incision which seems large at the time of operation is considerably smaller the next day). I then insert the gloved index finger to explore the cavity and gently break down any compartments. The deeper abscesses are often honeycombed in type instead of being in one cavity. One should be gentle in this manipulation so as not to spread infection into healthy tissue. I do not use a metal curet. I swab the cavity well with an antiseptic, e.g. phenol, followed by alcohol and then insert a drain. If there is free bleeding, I pack the cavity tightly the first time. After the first dressing, I use a very small wick of gauze for drainage. At the time of opening the abscess I make no attempt to find an internal opening, but wait a few days until the inflammation, tenderness, and discharge has subsided. But, at some time before the external opening has closed, I make a thorough examination to determine whether there is an internal opening, and the extent of the tracts and openings. Clemons and Scoresi[2] often depend only on the use of phenol locally as an anesthetic and describe their technic as follows:

"The patient is placed in the lithotomy position, the buttocks are shaved, washed and painted with tr. iodine. The blade of a dry sterile scalpel is dipped in pure carbolic acid. The point of the back of the blade is then passed over the crescent-shaped line of intended incision, in the most prominent part of the swelling, so as to mark it with phenol, thus anesthetizing the skin. A few seconds later the instrument is dipped again in the carbolic acid and the tissues are incised very slowly and gently, the scalpel being moved up and down as in cutting with a saw. When blood appears, a sponge is used or blunt artery forceps are applied, if necessary. The scalpel blade being dipped in the phenol as often as required, in order to keep deposited on its cutting edge a film of carbolic acid as it comes in direct contact with the tissues as they are cut, thus anesthetizing them. . . .

"In selected cases this is a most satisfactory procedure, devoid of danger and it is the easiest method of anesthesia to apply, and is the one which can be relied upon in all cases, as it is always successful, even when the tissues are most inflammed and in cases in which either local anesthesia is not possible or general anesthesia is contra-indicated. . . .

"Painless incisions of abscesses by the use of the carbolized scalpel, on account of the slight cauterization of the incised tissues produced by the action of the phenol, do not close as rapidly as incisions made with the untreated knife. This is a very great advantage when opening abscesses about the anus, because their cut edges do not immediately adhere thereby making packing of these wounds unnecessary, thus the complete cure is rendered more easy, painless and rapid."

Sometimes it is of great aid to dilate the sphincters after the abscess is opened.

Diagnosis and treatment more in detail will be discussed according to the following classification of rectal abscesses:

I. Circumscribed (Localized, walled-off infection).
   (*a*) Superficial (Infralevator): Those abscesses which are superficial, or below the pelvic diaphragm or levator ani muscle.

(1) Cutaneous (Tegumentary)
(2) Marginal (Submucocutaneous)
(3) Ischiorectal

(*b*) Deep (Supralevator): Those which are found in the superior pelvirectal space, above the levator ani muscle.
(1) Retrorectal: Above levator ani muscle and posterior to the rectum.
(2) Superior Pelvirectal: Above levator ani muscle and anterolateral to the rectum.
(3) Mural (Submucous or interstitial): Those found just beneath the rectal mucosa.

(*c*) Pilonidal Abscess
(*d*) Tuberculous

II. Diffuse (Septic Periproctitis).

I. CIRCUMSCRIBED ABSCESSES
INFRALEVATOR

(1) *Cutaneous.*—This is usually a folliculitis or infection of the perianal skin through the hair follicles. It is confined usually to the skin. Cleanliness is essential to limit the spread of infection. The region should be cleansed thoroughly and painted with a good antiseptic. The small abscess should be opened with a scalpel and the cavity carefully swabbed with phenol followed by alcohol.

(2) *Marginal.*—Here there is a circumscribed superficial collection of pus beneath the skin at the anal margin. It usually results from infection through a break in the mucocutaneous lining of the anal canal. Pain is usually of a rather severe, throbbing character on account of the grasp of the sphincter muscles. Treatment is the same as that given under general treatment for rectal abscesses, i.e., thorough cleansing, incision, swabbing the cavity, followed by antiseptic dressing, daily applications of hot packs or hot sitz baths.

(3) *Ischiorectal.*—This infection is usually rather deep seated at first; later it burrows in the line of least resistance which is toward the surface. If neglected, it may rupture into the anal canal between the sphincter muscles, or burrow through the posterior cellular space into the ischiorectal fossa of the opposite side, resulting in a horseshoe fistula. The gases that sometimes rush out when the abscess is opened do not always mean that there is a connection with the bowel; these gases may be the result of bacterial life within the abscess and the pressure is due to their pent-up condition.

When both ischiorectal fossae are involved, the surgeon's ingenuity is often taxed, because the posterior connecting tract must be drained. It would not be good technic to incise both cavities and also the posterior connecting sinus. One may open the posterior cavity widely and insert a drain into each lateral pocket. It is well to make a curved incision between the anus and coccyx, exposing the whole posterior connecting tract, and put a large drainage tube into either side. The most frequent complication is that the resulting scars may become so depressed about the anus that fecal matter is frequently lodged in them and is difficult to remove.

SUPRALEVATOR ABSCESSES

The deep rectal abscesses are more serious and present greater difficulties than the superficial ones, but fortunately, they are rare. They develop in the loose cellular tissue between the peritoneum above and the levator ani muscles below. This space is divided into the posterior (retrorectal) and anterolateral (superior pelvirectal). An abscess in one space shows little tendency to invade the other.

(1) *Retrorectal.*—This is caused by any rectal ulceration, necrosis of sacrum or coccyx, perforation by a foreign body, abdominal or pelvic abscess and by metastatic infection following trauma in this region. The symptoms are more or less vague at first. There is a feeling of fullness and discomfort in the rectum, and sacral or sciatic pain may be complained of. Usually there is temperature, malaise and other systemic symptoms. External palpation above the anus elicits some tenderness. Digital examination inside the rectum gives more information, usually disclosing a boggy or fluctuating swelling on the posterior rectal wall. If the abscess is not properly opened early, it may rupture into the rectum, or break through the levator ani muscle, separating its fibers, and open into the ischiorectal fossae and finally out through the skin.

When there is a suspicion that a deep pelvirectal abscess is forming, it should be watched very closely and opened and drained as soon as pus can be demonstrated. Frequent digital examination should be made inside the rectum, so that the abscess may be opened before it is allowed to rupture on the inside—a very undesirable thing to have happen. One cannot depend on external appearance, palpation, etc., to determine when incision should be made. On account of the abscess forming in deep from the surface, there will not be found the usual type of swelling, pointing or fluctuation. There will usually be some redness, a general swelling, tenderness on deep pressure and a pitting on pressure over the abscess cavity. If in doubt as to whether there is a pus cavity, it should be proved or disproved by the use of the aspirating needle. To open the cavity, a crescentic incision may be made between the anus and coccyx. Some operators do not agree with this for the reason that the attachment of the sphincter muscle to the coccyx is divided, its efficiency is impaired and a mutilating scar results, but prefer an incision through the ischiorectal fossa. The after treatment is the same as already given for rectal abscesses.

(2) *Superior Pelvirectal.*—The etiology and symptoms of this abscess are very similar to those of the retrorectal abscess—weight in the pelvis, patulous anus or constipation and bladder symptoms. Differential diagnosis is to be made from a prostatic abscess in the male, and from pelvic abscess in the female. Digital examination again is of much value here. If, on catheterizing the male, the bladder is easily entered and the urine is clear, prostatic abscess can be ruled out. In the female, a vaginal examination will usually disclose the condition of the uterine adnexa and parametrium, giving a clue to the true conditions. If this type of abscess is unrecognized or neglected, the prognosis is grave, due to the danger of burrowing of the abscess or its rupture into the peritoneal cavity, bladder or rectum. Here, again, the condition should be watched closely, and the abscess opened early.

Surgical drainage is the only treatment. Incision is made through the ischiorectal fossa. A practical rule is that any abscess that can be palpated per anum can be opened through the perirectal tissues. A long anteroposterior or crescent-shaped incision is made down to and through the levator ani muscle until pus begins to flow. Thereafter, blunt dissection is used. The cavity is explored with the finger. If the fibers of the levator ani are merely separated, the opening has a tendency to close before the cavity has healed. Drainage tubes or gauze wicks are used for a week or longer; cleanliness, hot sitz baths and other postoperative measures are used.

(3) *Mural or Submucous.*—Yeomans' claims that, strictly speaking, this is the only abscess of the rectum proper. It occurs in the submucous connective tissue between the mucous and muscular coats, usually in the lower three inches of the rectal wall. It usually follows an ulceration or injury to the rectal mucosa.

The symptoms are: fullness in the rectum, dull ache and throbbing, and occasionally increased tempera-

ture. A thrombotic internal hemorrhoid may be mistaken for a submucous abscess, but there is no elevation of temperature unless infection is superimposed upon the thrombotic pile. The aspirating needle may help in differential diagnosis.

It is claimed by some that if the abscess opens spontaneously at the pectinate line, it should be kept under observation, as half of them will heal without interference. Others do not agree with this. A more sure method of obtaining good results is to split the mucosa the full length of the abscess cavity and pare off part of its margins. One must be well prepared to control all bleeding, as it may be troublesome. Aftercare consists of packing tightly perhaps at first, and after the first few days the application of antiseptics and the exploration and smoothing out of the tract with the gloved, lubricated finger.

PILONIDAL ABSCESS

This type of abscess is the result of an infection in a pilonidal cyst or sinus. The treatment is to open and drain the abscess, and later to remove surgically the entire region involved by the sinuses and cyst.

TUBERCULOUS ABSCESS

A tuberculous abscess is commonly of the marginal type. Its course is usually slow and the symptoms are mild. A small perforation appears on the skin accompanied by a pale, watery discharge. The slow onset, the appearance of the abscess, character of the discharge and the finding of a tuberculous focus elsewhere will help determine the diagnosis. A microscopical examination or culture may be necessary.

The treatment is to open and drain the cavity in the usual manner. The cavity should be thoroughly seared with phenol followed by alcohol or with the actual cautery to seal the lymphatics.

II. DIFFUSE ABSCESSES

The diffuse inflammatory infections in the rectal region together with their possible severe complications present a real problem for the proctologist. The onset is sudden and violent, quickly followed by a chill, high temperature and fast, toxic pulse. The entire anal region quickly becomes red, swollen, and extremely tender and the patient is very ill.

Treatment consists of the usual supportive measures together with local applications of a continuous hot water bath, hot boric fomentations, Carrel-Dakin solution, or the Elliott system of continuous irrigation, until the infection is localized. The treatment then is surgical drainage.

623-4-5 Shukert Bldg.

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1. Drueck, Charles John: Fistula of the Anus and Rectum. F. A. Davis Company, Philadelphia, 1927.

2. Clemons, E. Jay and Scoresi, A. L.: Referred to by Drueck, idem., p. 46.

3. Yeomans, Frank C.: Proctology. Ed. 3. D. Appleton and Company, New York, 1929.

Hirschman, Louis J.: Diseases of the Rectum. The C. V. Mosby Company, St. Louis, 1920.

The State Compensation Commissioner is presumed to administer the Workmen's Compensation Law in an impartial manner for the best interests of the injured worker. He should, therefore, know what is the best treatment for all types of injuries. How many have been told what is the proper treatment for back injuries?

Osteopathic physicians should cooperate in demonstrating the proper treatment for this disabling and expensive injury to workers, employers, and insurance men. All concerned would benefit from such a demonstration.

A. T. STILL OSTEOPATHIC FOUNDATION AND RESEARCH INSTITUTE

JOHN E. ROGERS, President, Oshkosh, Wis. — R. E. BECKER, Managing Director, Chicago

A.O.A. AND FOUNDATION-RESEARCH INSTITUTE AMALGAMATE

The Board of Trustees of the A. T. Still Osteopathic Foundation and Research Institute held their annual meeting in New York in connection with the fortieth annual convention of the American Osteopathic Association, July 20 to 24. After considerable discussion and deliberation, the Board reached a decision that seemed for the best interests of the profession and for the preservation of the funds at its disposal. It was thought wise to tender an offer to the American Osteopathic Association for the latter to take over the duties and responsibilities, and the liabilities and assets of the Foundation-Research Institute. Accordingly, it proposed such an amalgamation of interests to the Board of Trustees and the House of Delegates of the American Osteopathic Association. After considerable discussion and investigation, the Association accepted the offer. The transaction will be completed as soon as legal matters connected with the transfer are taken care of.

The American Osteopathic Association is not in a position to say what the program for liquidating the financial affairs of the old institution will involve, nor is it possible, now, to announce the plans for carrying out the previously announced program of the Foundation-Research Institute.

The Board made sure of the continued services of Louisa Burns.

It is confidently expected that a plan can be evolved whereby the support of the profession—morally, professionally, and financially—will be warranted in the consummation of the purposes for which the original organizations were formed, but it must be realized, also, that new plans cannot be evolved and put into operation at once. It will take time to build a solid substantial effort which characterized the movement originally.

R. C. Mc.

Communications

SOLVING TREATMENT TABLE COVERING PROBLEM

The following letter was received in answer to plea published in the July JOURNAL for suggestions regarding sanitary methods of procedure whereby the entire treatment table top may be covered with a sheet for each patient:

For the past three years we have used individual white muslin sheets, 36 inches wide and 72 inches long.

Each patient is given a sheet (female patient, a sheet and a pair of two-piece seersucker pajamas). The sheet is folded in half and is used on the upper part of the McManis treatment table. When patient is placed face down, the sheet is folded back under the chest and a paper napkin is used for the forehead. When the patient is placed on his back or side, pillow is placed under the head and the sheet is then pulled up over the pillow.

When the patient is taken to another room for physiotherapy or whatever other treatment is needed, the sheet is taken along and placed full length on the treatment table.

After the patient is finished, the sheet, pajamas, or any other small towels used in the treatment are placed in a large manilla envelope, (legal size which can be purchased at the 5 and 10 cent store for 5 cents each). Name is put on the envelope and it is then filed away until the next treatment, at which time the patient is handed the envelope. Sheets and pajamas are changed according to the times used. If only one treatment is necessary, the sheet is then placed in the laundry bag.

This method has proven very satisfactory and patients are very much pleased with the system.

Current Osteopathic Literature

Abstracted by R. E. Duffell, D.O.

OSTEOPATHIC DIGEST
PHILADELPHIA

9: No. 6 (May), 1936

1,000,000 Is Needed for Philadelphia's Osteopathic College and Hospital.—p. 2.
The Alumni Answer the Call. Donald B. Thorburn, D.O., New York City.—p. 4.
Alumni Day Program.—p. 5.
The Graduate School. E. O. Holden, D.O., Philadelphia.—p. 9.
P.C.O. Graduate Receives Amateur Radio License.—p. 10.
Appointment of Chief Resident Physician at Philadelphia Osteopathic Hospital Announced.—p. 11.
*Scientific Supplement. *A Survey of Some of the Mechanisms and Processes Through Which Abnormal Spinal Mechanics Can Produce Local and Remote Effects. Frederick A. Long, D.O., M.Sc. (Ost.), Philadelphia.—p. 13. Osteopathic Considerations in Peptic Ulcer. Ralph L. Fischer, D.O., M.Sc. (Ost.), Philadelphia. —p. 20.
Graduates of P.C.O. are Broadcasting Weekly.—p. 25.
General News.—p. 26.
The Axone.—p. 33.

*A Survey of Some of the Mechanisms and Processes Through Which Abnormal Spinal Mechanics Can Produce Local and Remote Effects

In this article Long has correlated the important experimental and clinical data concerning the physiological processes through which mechanically embarrassed vertebral joints may produce their local and remote effects. Mechanical embarrassment, he says, may result from direct injury as in strain or sprain, from faulty posture, from certain diseases (poliomyelitis, obesity), affecting spinal muscles, from developmental anomalies, from reflex causes interfering with normal function of spinal muscles, and from actual subluxation.

The principal feature of mechanical embarrassment is found in restricted articular motion. Previous roentgenologic studies performed by the author and P. T. Lloyd† failed to show any lesioned articulation that did not have some motion. The fundamental factor in a lesioned joint is that motion is obtained in other than normal planes.

Early changes locally or remotely are induced by forces set in motion when normal physiological movements are embarrassed. Locally these changes have to do principally with disturbed water balance (edema) and altered chemistry (acidosis). These changes occur before the stage of acute inflammation is reached, and, in fact, that stage may not have to be reached in order that remote tissues may be affected, as Long shows later in the article.

To understand the local effects that result from tissue trauma, certain fundamentals of capillary function must be studied. It is believed that the caliber of the capillary is regulated in three ways: nervous regulation by central nervous system reflexes, (b) local (chemical) regulation by the production of a histamine-like substance in the tissues causing capillary dilatation and increase in permeability, and (c) hormone regulation by adrenalin and pituitrin in the blood stream.

Alterations in capillary permeability have much to do with the production of edema. Loss of plasma proteins from the capillary decreases intracapillary osmotic tension and increases it in the tissue spaces with resultant loss of fluid from the capillary to the tissues.

The nervous control of the capillary is not easily explainable. The author suggests the possibility that afferent impulses, disturbed in their rate of discharge, might produce a central inhibitory state in neurones involved in maintaining tonus through Rouget cells, thus resulting in capillary dilatation.

†Long, F. A. and Lloyd, P. T.: The Use of the Roentgen Ray in the Study of Vertebral Mechanics with Special Reference to Its Adaptability in Osteopathic Procedure. Scientific Supplement to Osteopathic Digest, 1935 (Nov.-Dec.) 1:1-16. Reviewed in Jour. Am. Osteo. Assn., 1936 (Jan.) 35:265.

Of even greater importance than the nervous and chemical reactions occurring at or near the tissues of the vertebral articulations suffering from faulty mechanics, are the changes produced in tissues and organs remote from the spinal region, but related to it through innervation.

The mechanism whereby alterations in joint structure must operate to produce variations in capillary caliber in remote tissues is the spinal reflex. Long describes this reflex as follows:

> The first neurone involved in the reflex has its cell in the dorsal root ganglion, a peripheral process to the spinal joint surfaces and periarticular tissues which acts as receptor, and a central process entering the cord over the dorsal (afferent) root of the spinal nerve. Central collaterals of this afferent fiber transmit the impulse to the intermediolateral cell groups of the thoracic and upper lumbar portions of the spinal gray either directly, or through one or more interposed association neurones. The peripheral fibers of the cells in the intermediolateral columns leave the cord over the ventral root to enter the sympathetic system over white rami communicantes to the lateral chain ganglia. Vasomotor cells for the arterial, arteriolar, and capillary vessels are contained in either lateral or collateral sympathetic ganglia. The connector (preganglionic vasomotor) fibers from the cord end in relation to these vasomotor cells which constitute the effector neurones of the reflex arc.

Much more needs to be known, Long says, concerning capillary circulation and control, but the same mechanism probably applies here as locally, i.e., some disturbance in rate of discharge of impulses caused by poor mechanics in the joints results in a central inhibitory state induced in the intermediolateral column of cells in the spinal cord (vasomotor connector neurones) which prevents the normal outflow of vasomotor impulses; the end result is capillary dilatation from lack of tonus.

In substantiation of his statement that disturbances in local and remote tissues occur at about the same time following joint lesion, Long cites the experimental work done by Burns et al. Local changes, therefore, do not have to be well established in order to set in motion forces which can disturb remote tissues. These local changes, however, are important factors in preventing a return to normal condition of remote tissues.

In addition to the changes in circulatory function locally and in remote tissues, Long discusses the disturbances that take place in the physiological activity of organs related to the faulty articulations by innervation. These physiological activities are under the control of the vegetative nervous system. To the parasympathetic part of the vegetative system are given over those functions such as maintenance of nutrition, secretion, etc., of the organism, while to the sympathetic part is given the important function of protecting the organism from harmful forces. It is the latter part that is largely involved in reactions to abnormal spinal states. Long describes the manner in which impulses break down the barrier (synapse) ordinarily erected by the vegetative (intermediolateral) connector neurone and overflow from the somatic level to the vegetative. He refers to experimental studies other than those performed by osteopathic physicians, to show that spinal changes produce effects in tissues supplied by vegetative nerves. "The manner in which the spinal abnormality can induce the changes within the cord has not been made clear, but it probably involves in part at least, chemical and nutritional alterations occasioned by capillary changes producing disturbance in chemical balance and edema which might well alter cellular and synaptic nutrition."

The nutritional state of a nerve fiber depends upon its nerve cell body. If the cord cells are affected by bad spinal mechanics, nutrition is reduced or altered and the fibers will transmit impulses of less strength than they would under conditions of normal nutrition. "The nerve fiber responds in an all or none fashion; that is, if it responds at all to a stimulus it will be to its maximum capacity to do so." The functions subserved by these fibers (in the case of visceral efferent to lateral, collat-

eral, or terminal sympathetic ganglia) would be decreased.

In his concluding paragraphs Long takes up the question whether in a joint lesion actual pressure on nerve fibers, either by tissues under tension or structurally altered, or by edema, can produce the effects noted in remote tissues. The idea of direct bony pressure has long ceased to receive serious consideration. He cites experiments that have been performed which show that if an impulse gets through a depressed section of a nerve fiber at all, it regains its former strength. Therefore, the pressure must be sufficient to prevent completely the passage of impulses. "That pressure to this extent actually exists in the spinal lesion or other spinal alteration of a like nature has yet to be proved. . . . It is probably not, then, upon the fiber that the pressure present in the spinal area produces its maximum effect, but upon the cell body and synapse."

THE COLLEGE JOURNAL, KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY
20: 129-160 (May), 1936

Golf at the Annual Convention.—p. 132.
Lacerated Eroded Cervix Uteri. George J. Conley, D.O., Kansas City, Mo.—p. 133.
*The Depressive Psychoses. R. H. Wahl, D.O., Macon, Mo., —p. 136.
Farewell to our Seniors. Margaret Jones, D.O., Kansas City, Mo.—p. 139.
Questions Pertaining to Tuberculosis. W. B. Gould, D.O., Denver, Colo.—p. 141.
Amebic Dysentery. Yale Castilo, D.O., Kansas City, Mo.—p. 143.
Missouri "Show Me" State.—p. 145.
Modern Miracles. Wallace M. Pearson, A.B., B.Sc., D.O., Kansas City, Mo.—p. 146.
Excerpts from the Aesculapian. Medicine as Practiced by the Chinese. Mr. W. F. Lee, Kansas City, Mo.—p. 153.

***The Depressive Psychoses.**—Wahl says that the depressive psychosis is only one of many other possible mental states of any major mental problem. An early manifestation of this psychosis in children might be called moodiness. In adult life it might be called melancholia. The condition occurs commonly between the ages of 20 and 50 years. The cardinal symptoms are, first, difficulty of thinking; second, psychomotor retardation; third, emotional depression.

Wahl appends a case history to his discussion. Treatment of this patient (a woman) consisted of correction of osteopathic joint lesions, special diet to improve nutrition, the establishment of regularity in elimination (patient was badly constipated) and other hygienic measures. She was encouraged to associate with others. Psychotherapy included frequent frank discussions with a member of the staff about the significance of certain symptoms of which she complained. After eight weeks she became more cheerful and otherwise sociable. After three months' treatment she was discharged and returned home, her mental state being normal.

CLINICAL OSTEOPATHY
LOS ANGELES
31: No. 11 (May), 1936

Ununited Epiphyses of Transverse Processes of First Dorsal Vertebra. Dain L. Tasker, D.O., Los Angeles.—p. 5.
Pituitary-Like Gonadotropic Hormones. Mary L. Le Clere, A.B., D.O., Los Angeles.—p. 7.
*Technic for Displaced Semilunar Cartilage. Bruce S. Collins, D.O., Santa Monica, Calif.—p. 9.
Acute Purulent Otitis Media. Jacquelin Bryson, Los Angeles.—p. 10.
Program of California Osteopathic Association Convention, June 22 to 26.—p. 13.
Editorial: Consumers' Research Attacks Osteopathy.—p. 15.
General News.—p. 16.

***Technic for Displaced Semilunar Cartilage.**—Collins says that about 90 per cent of the displacements of the semilunar cartilage of the knee joint involve the medial meniscus. The objects of treatment are (1) to replace the meniscus in proper position and (2) to secure proper relationships between the condyles of the femur and the articular surfaces on the head of the tibia. The technic for a displaced cartilage of the left knee joint is given as follows:

With the patient supine, the operator stands on the side of the lesion, takes the patient's left leg and places the ankles between his body and left arm. Place the left thumb on the tibial collateral ligament. Place the right thumb on the border of the lateral meniscus, by first taking a position between the head of the fibula and the lateral condyle of the tibia, then move the thumb upward and medially toward the patella about one inch. With the thumbs in position, the operator leans his body backward to bring traction and relax the knee joint.

From this point we may proceed in one of two ways: (1) Circumduct the knee once in a small circle, and when the lateral side is reached for the second time, suddenly bring a combined medialward thrust with traction. (2) Carry the knee from side to side, and when relaxation is felt, suddenly bring a combined medialward thrust with traction.

In either case the treatment is completed by having the patient sit on the side of the table. The operator then grasps the patient's leg near the knee with his right hand and with left hand grasps the patient's ankle. Now rotate the leg slightly medially and extend it fully. This brings about a normalization of the relationships between the condyles of the tibia and femur.

THE JOURNAL OF OSTEOPATHY
Kirksville, Mo.
43: No. 5 (May), 1936

General News.—p. 5.
Editorials: Professional Liability Insurance. Postgraduate Study.—p. 10.
The Scientific Basis of Thermogenics. Wilborn J. Deason, M.S., D.O., Chicago.—p. 12.
Have You Got Cold Feet? Philip Spence, D.O., White Plains, N. Y.—p. 15.
Quick, Watson—the Digitalis! John C. Button, Jr., D.O., Kirksville, Mo.—p. 17.
Osteopathic Education: A Progress Note. Harvey G. Swanson, M.A., D.O., Kirksville, Mo.—p. 19.
K.C.O.S. Surgical Clinics. Earl H. Laughlin, Jr., D.O., Kirksville, Mo.—p. 21.
Oral Infection: A Danger Signal. Seth Thomas, D.D.S., Kirksville, Mo.—p. 23.
Personalities in Practice. John C. Button, Jr., Kirksville, Mo.—p. 26.
News of Kirksville.—p. 28.
Science News Notes. Wilborn J. Deason, M.S., D.O., Chicago.—p. 30.
Historical.—p. 32.
State and District Meetings.—p. 34.

43: No. 6 (June), 1936

General News.—p. 5.
Editorial: The New York Convention. H. E. Litton, D.O., Kirksville, Mo.—p. 11.
Osteopathy and Fever Therapy. James Franklin Blanchard, D.O., M.D., Oph.D., Los Angeles.—p. 12.
*First Aid and Aftercare in Eye Burns. A. C. Hardy, D.O., F.I.S.O., Kirksville, Mo.—p. 15.
Quick, Watson—the Dinitrophenol! J. C. Button, Jr., D.O., Macon, Mo.—p. 17.
K.C.O.S. Surgical Clinics. Earl H. Laughlin, Jr., D.O., Kirksville, Mo.—p. 19.
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Consumers' Research Raps Osteopathy.—p. 24.
News of Kirksville.—p. 25.
Program of the American Osteopathic Association Convention, New York.—p. 30.
State and District Meetings.—p. 34.

***First Aid and Aftercare in Eye Burns.**—In case of eye burns, the general physician should give first aid and then remove the patient immediately to a hospital where, usually, a competent ophthalmologist may be obtained.

In case of chemical burns, Hardy says that neutralization in first aid work is impractical. The neutralizing agent may be just as harmful as the original chemical and very often the tears and other tissue fluids have already diluted the chemical, if not actually neutralized it.

The initial step in first aid treatment should be to cleanse the eye. A weak solution of sodium bicarbonate may be used as a cleansing agent, removing possible infection, dirt, and other irritating material. The second step should consist in filling the eye with sterile vaseline, or some other bland oil followed by careful bandaging. A drop of atropine sulphate (1 per cent solution) in the eye is advisable if the patient is unable to reach a hospital for several hours.

Hospital treatment consists of irrigating the eye with warm saline or boric acid solution. Fluorescein (a 2 per

cent staining solution) should be instilled and the eyes again irrigated. Definitely burned tissues will be marked out by the stain and the intensity of the stain indicates the probable depth of the burn.

Further treatment involves the use of mercuric oxide, yellow, in a 1 per cent ointment to prevent infection or atropine sulphate (1 per cent solution or ointment) at frequent intervals to keep the pupil dilated if the cornea and iris have been injured. Also a liberal quantity of sterile vaseline should be kept in the eye to protect against friction, and consequent pain and further damage, and to prevent adhesions forming between raw surfaces. The eyes should be kept bandaged in between treatments. When the cornea has healed (no longer staining with fluorescein), the bandage may be removed and the eye protected with dark glasses. When the eye fully recovers, the patient should be checked for refraction and vision.

BRITISH OSTEOPATHIC REVIEW
LONDON, ENGLAND
3:109-140 No. 2 (May), 1936

Notes by the Editor.—p. 112.
The Seven Sins of Vegetarianism. Are Waerland.—p. 114.
Zone Therapy. The Treatment of Diseases by Pressure. Frank W. Britton, D.Sc.—p. 115.
Help for the Eyes. Madeleine Fousset.—p. 116.
Colonic Therapy in the Osteopathic Treatment of Chronic Intestinal Stasis. G. Irving Evans, D.O.—p. 117.
The Cure of Caliosis Is Based on the Straightening of Weak Feet. Hubert J. Pocock, D.O.—p. 119.
Back Strain. Paul T. Lloyd, D.O., M.Sc. (Ost.)—p. 122.
Books Reviewed.—p. 135.

Current Medical Literature

Abstracted by R. E. Duffell, D.O.

Zinc Ionization in Nasal Allergy

L. B. Bernheimer reports the clinical results obtained through zinc ionization in twenty-five patients suffering from hyperesthetic rhinitis and ten with seasonal hay fever as compared with the results obtained by the use of escharotics (trichloroacetic acid or phenol) in twenty individuals suffering from hyperesthetic rhinitis and ten others with hay fever.

The ionization treatment consisted of the application of a galvanic current of from 15 to 20 milliamperes to a solution of zinc sulfate (either by gauze packing or in the form of a jelly) for a period of from 15 to 20 minutes. The histologic changes in the mucous membrane of the nasal chambers following zinc ionization were similar to those found following the use of escharotics. Periods of regeneration following treatment were also similar.

The author reports that the clinical course of hyperesthetic rhinitis was influenced in only 5 per cent of twenty-five patients who were treated with ionization. Slightly better results were obtained by the use of escharotics. The clinical course of hay fever was not altered by the use of either ionization or escharotics.

The Crepe-Paper Bandage Versus the Sheet-Wadding Roll

In orthopedic conditions requiring plaster casts, Alfred J. Buka has found that the crepe-paper bandage is far superior to the sheet-wadding roll. The crepe-paper bandage possesses flexibility, resiliency, and softness and when encircling a part grips it firmly, evenly, and easily, yet compensates for a certain amount of swelling in the retained part. It controls hemorrhage better than sheet-wadding. The completed cast, when crepe paper is used between body and plaster, is much less clumsy, is lighter in weight, and permits freer movement of the part, than when sheet-wadding is used. Crepe is no more expensive than sheet-wadding. Abstracted from *The Journal of Bone and Joint Surgery* for July, 1935.

Paget's Disease (Osteitis Deformans) and Osteoporosis

Robert C. Moehlig points out the similarity of the two conditions, osteitis deformans and osteoporosis, as shown by familial characteristics and glucose tolerance studies. In a former paper the author showed that there is a high incidence of familial diabetes mellitus, familial tallness, and familial obesity in patients suffering from Paget's disease. In this present paper the histories of 10 cases of Paget's disease were compared with the histories of 10 cases of osteoporosis. Data gathered on osteoporosis showed that there was a diabetic family history in 40 per cent, 60 per cent had one or more members of the family who were 72 or more inches tall, and 90 per cent gave a history of heavy set individuals in the immediate family. This corresponds with data obtained in Paget's disease. In both diseases the glucose tolerance curves were similar—a diabetic type of curve.

It was suggested by the author that disturbances in pituitary function were responsible for the two diseases since function of that gland is related to disturbed carbohydrate metabolism.

The utilization of insulin together with a measured diet have brought subjective improvement to some patients suffering with Paget's disease.

Oxygen and Seizures of Epilepsy

The hypothesis that some alteration of the acid-base balance of the blood is involved in epilepsy has been strengthened by the experiments performed by W. G. Lennox and A. R. Behnke. They tested the effect of low and high oxygen tension on three young women who were known to be subject to numerous attacks of petit mal daily. The patients were placed in a gas-tight chamber and were subjected to pressures ranging up to 4 atmospheres for periods of from 3½ to 5 hours. The number of attacks during the periods of increased pressure were decreased an average of 45 per cent as compared with the number of attacks during an equal interval on the same day while the patients were exposed to normal atmospheric pressure. These experiments seem to indicate a distinct relationship between oxygen content of respired air and seizures of petit mal.—Abstracted from Current Comment, A.M.A. Journal, June 13, 1936. Effect of Increased Oxygen Pressure on the Seizures of Epilepsy, Arch. Neurol. and Psychiat., 1936 (Apr.) 35:782.

The Treatment of Hydrocele by the Injection Method

Irwin I. Lubowe gives the diagnosis for hydrocele and the technic which he uses for treating it by the injection method. Some of the essential points of diagnosis are described as follows: "On palpation the tumor is found to be pyriform, elastic to touch, dull on percussion without any impulse on coughing, and usually cannot be reduced and returned into the abdomen." A hydrocele is translucent when an electric hand-searchlight is placed along the posterior aspect of the scrotum. The author says that this sign is not an infallible one, as thickened walls of the sac or the turbidity of its contents may prevent the light from being transmitted. As a final diagnostic measure, one may aspirate the suspected hydrocele with a very fine needle, and the contents of the syringe may be examined.

The technic of treatment consists of aspirating the contents of the hydrocele and injecting sodium morrhuate to obliterate the sac (formed by the tunica vaginalis). One quarter grain of morphine sulphate with one-hundred-fiftieth grain of atropine sulphate is injected intramuscularly ½ hour before the intended injection of sodium morrhuate. Immediately before injection of sodium morrhuate, a tablet of luminal or sodium amytal may be given by mouth. The amount of sclerosing material (sodium morrhuate) to be injected depends

upon the amount of aspirated fluid. The author has found that 1 cc. of sodium morrhuate (5 per cent) for each 50 cc. of aspirated hydrocele fluid is the proper proportion. After the injection, the patient is then given another analgesic tablet and an ice pack is applied immediately to the scrotum. He then is instructed to lie in a horizontal position for one to three hours. After this he may go home, but is told to remain in bed for 24 to 48 hours. After one week, he returns for further treatment which consists of aspirating the fluid which has accumulated since the original injection. Smears and cultures are taken of the aspirated material. Frequently an orchoepididymitis results from the inflammatory reaction that takes place, but this can be controlled easily by rest, suspension of the scrotum, application of ice packs and subsequently the use of short-wave therapy.

Case Histories

OPERATION TO CLOSE ARTIFICIAL OPENING IN TRACHEA

WALTER V. GOODFELLOW, D.O.
Hollywood, Calif.

Male, aged 61 years, wished to discard a tracheotomy tube which he had worn for 58 years. Tracheotomy was done and tube inserted at age of 3 years during an attack of "membranous croup." Patient reported that some time later he nearly died when some physician endeavored to leave the tube out, and since that time he has made no attempt to discard the tube until now.

He has been in good health except for a stroke of apoplexy 5 years ago. He lost the use of his left hand and arm and walks with difficulty with a cane. He has had no severe colds or catarrh. He has not been subject to sore throat or nasal irritation, although he has an annoying cough.

Examination.—Tonsils were hypertrophied moderately and inflamed but not infected. Nose and ears were normal. We removed a tracheotomy tube of small size, curved, about 1 inch long, closed by obturator to occlude tracheotomy opening. Tissue about tracheotomy opening was in surprisingly good condition, without evidence of irritation or abnormal growths, but it was lined with heavy circular bands of scar tissue.

We decided that the tracheotomy tube could be dispensed with and that plastic surgery should be used to close the opening.

Treatment.—Under a local anesthetic (novocaine), operation consisted of inverting a thin layer made by dissecting off the scar lining of the fleshy tube to a depth of 1/16 of an inch. This inverted tissue formed the tracheal covering of the wound. A pedicaled fascia flap was swung across the external opening and sutured with catgut. The skin was then approximated somewhat off center by making a liberal slit on one side. This effectually closed the opening. Bleeding from the operative field into the trachea was prevented by a cotton plug on a suture which was inserted into the trachea before the operation was started and pulled back against the tracheal opening and firmly held by an assistant. This was removed after all flaps had been made, bleeding controlled, and everything ready for suturing. Patient had no unusual coughing following the operative work and progressed satisfactorily, except for some loss of skin tissue, without infection or serious delay in healing.

Remarks.—This case is reported because of the unusual circumstances of a man wearing an annoying device an entire lifetime unnecessarily. During this time it was necessary for him to cleanse this tube and care for the wound. He was constantly subjected to the danger of lung infection. He probably would have worn the tube the rest of his life had he not suffered the stroke of apoplexy rendering his left hand useless. This necessitated having an attendant cleanse and care for the metal tube which was very annoying and humiliating to him and for this reason he sought relief. It must be noted that the tube was never worn (except during the time of the acute illness with laryngeal closure) without obturator. During all these years he has had good laryngeal function, good voice, and no impairment of respiration. His unfortunate experience, when a doctor attempted to remove the tube, led him to believe that it could not be done with safety. It should be noted that it is the responsibility of the physician to remove such an apparatus as soon as the emergency is over.

14 Hollywood Security Bldg.

Book Notices

MARTINI'S PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. Edited by Robert F. Loeb, M.D., Associate Professor of Medicine, College of Physicians and Surgeons, Columbia University and Presbyterian Hospital, New York City. Authorized Translations by George J. Farber, M.D. Cloth. Pp. 213 with 30 illustrations. Price, $2.00. J. B. Lippincott, 227 S. Sixth St., Philadelphia, Pa. 1935.

Professor Paul Martini of Munich observes that the training of the sense faculties is the foundation without which the development of the student of medicine is impossible. Therefore, while recognizing the importance of roentgenology, electrocardiography and other mechanical means, yet he places special emphasis on thorough percussion and auscultation in studying the respiratory, the circulatory and the cardiovascular systems and the abdominal organs. In this compactly printed book the systems are taken up one by one and the physical findings enumerated in detail.

ABORTION, SPONTANEOUS AND INDUCED: MEDICAL AND SOCIAL ASPECTS. By Frederick J. Taussig, M.D., F.A.C.S., Professor of Clinical Obstetrics and Clinical Gynecology, Washington University School of Medicine, St. Louis. Cloth. Pp. 536, with 146 illustrations. Price, $7.50. C. V. Mosby Company, 3523 Pine Boulevard, St. Louis, Mo. 1936.

This first American book to cover the ground with any completeness is prepared by a man who has studied and written on the subject for at least a quarter of a century. He has been active in public health matters, took part in the organization of a national association for social hygiene, has had a prominent place in the birth control movement, and in the White House Conference his work was the study of abortions in relation to fetal and maternal mortalities. In the preparation of this book he had the active help of the National Committee on Maternal Health.

He takes up the history and racial aspects of abortion, pathology, etiology, diagnosis, complications, sequelae, treatment, methods of therapeutic abortion, and preventive measures. Under the head of social aspects of abortion he deals with economic and domestic problems as well as those of theology and ethics. He discusses the pros and cons of legalized abortion in the United States and the legal aspects of induced abortion here and abroad. There is an extensive bibliography.

ATLAS OF HUMAN ANATOMY WITH EXPLANATORY TEXT. By Jesse Feiring Williams, M.D., Columbia University. Illustrations by Franz Frohse, University of Berlin; Max Brodel, Johns Hopkins University, and Leon Schlossberg, Johns Hopkins University. Cloth. Pp. 64. Price, $2.00. Barnes & Noble, Inc., 105 Fifth Avenue, New York City. 1935.

A small book containing brief discussions of anatomy, arranged by systems and followed by 28 pages of colored

charts, some of them reduced reproductions of the life-size colored charts published some years ago by Franz Frohse of Berlin. Many others of the colored charts illustrate various parts of the body and these are grouped in logical order. The book should prove interesting and valuable to the layman or to the physician who would explain anatomical facts to the layman.

SHORT WAVE THERAPY AND GENERAL ELECTRO-THERAPY ILLUSTRATED. By Heinrich F. Wolf, M.D. Cloth. Pp. 96, with 79 illustrations. Price, $2.50. Modern Medical Press, 225 Varick Street, New York City. 1935.

A small sketchy book at a rather high price.

TEXTBOOK OF OBSTETRICS. By Frederick C. Irving, A.B., M.D., F.A.C.S., William Lambert Richardson Professor of Obstetrics, Harvard University Medical School, Visiting Obstetrician, Boston Lying-In Hospital. Cloth. Pp. 558, with 357 illustrations. Price, $6.00. The Macmillan Company, 60 Fifth Avenue, New York City. 1936.

This is a well-written text based on the outlines used by the author in his courses in Harvard Medical School. It mirrors his work as obstetrician and teacher and will prove helpful to both students and practitioners. Most of the illustrations are from drawings. Extensive references are given for those who would investigate further any particular subject which is not sufficiently covered.

MEMOIRS OF A SMALL-TOWN SURGEON. By John Brooks Wheeler, A.B., M.D., Sc.D., F.A.C.S., Emeritus Professor of Surgery, University of Vermont, College of Medicine. Cloth. Pp. 336. Price, $3.00. Frederick A. Stokes Company, 443 Fourth Ave., New York City. 1935.

This sketch of the changes taking place in surgery during the active lifetime of one doctor is highly interesting as well as instructive.

Those who grow weary of the writers about "scientific medicine," who would have us believe that allopathy has always been what it is today, that osteopathy has always been greatly inferior, will be intrigued with the stories of early operations during which oil lamps went out, instruments were lost, instructions misinterpreted, etc. They will notice that one picture shows a surgical operation in 1874 (the year osteopathy was promulgated) when no precautions were taken against infections. They will notice the picture taken in 1893 (when the first osteopathic college was but a year old) before even the essentials of asepsis were realized.

PARENTERAL THERAPY. A Ready Reference Manual of Extra-Oral Medication for Physicians, Dentists, Pharmacists, Chemists, Biologists, Nurses, Medical Students and Veterinarians. By Walton Forest Dutton, M.D., and George Burt Lake, M.D., Editor, Clinical Medicine and Surgery. Cloth. Pp. 386, illustrated with 90 halftones and line engravings. Price, $7.50. Charles C. Thomas, Springfield, Ill., 1936.

There has been a great development in the use of serums, vaccines, endocrine extracts, and other biological products, as well as many other drugs administered by the injection method. The tremendous literature dealing with these things has seldom, if ever, been boiled down into one book such as this, which is divided into three main parts.

The first part gives details relating to the various technics of parenteral medication—intradermal, hypodermic, intravenous, intraspinal, intraventricular, and other injections; intravenous, caudal, infiltration, and inhalation anesthesia; alcohol injections, ionization, blood transfusion, various injection treatments, etc.

Part two lists alphabetically the diseases amenable to treatment by parenteral methods, giving under each disease a list of the drugs to be so used.

Part three gives an index of drugs which may be used safely by parenteral methods, including the various names by which they are called and something of the chemical nature, preparation, sources of supply, physiological action, therapeutic uses, and dosage of each.

The book is well indexed.

State Boards

California

Under the Legal and Legislative column of this issue of THE JOURNAL is an announcement that the osteopathic examining board adopted a rule which will open the door for securing physicians and surgeons certificates to some osteopathic physicians licensed as drugless practitioners who could not, until now, so qualify. For further information, see p.577.

Georgia

The following officers of the Georgia Osteopathic Examining Board were elected recently: President, Walter B. Elliott, Atlanta; vice president and secretary, W. A. Hasty, Griffin.

Illinois

Oliver C. Foreman, 58 E. Washington Street, Chicago, reports that the Illinois State Board examinations will be held on October 20, 21, and 22 in Chicago.

Iowa

The Iowa Board of Examiners in the Basic Sciences will conduct a written examination at the State Capitol, Des Moines, on October 13 at 9 a.m. Address all communications to E. A. Benbrook, Secretary, Iowa Basic Science Board, % Iowa State College, Ames.

West Virginia

The following are the present officers of the West Virginia State Board of Osteopathy: President, Robert B. Thomas, Huntington; vice president, Harwood James, Beckley; secretary-treasurer, Guy E. Morris, Clarksburg.

Ontario

Eldon S. Detwiler, London, was recently appointed to the examining board for a term ending June 19, 1938.

Conventions and Meetings

Announcements

American College of Osteopathic Surgeons, Denver.

California state convention, San Jose, 1937.

Florida state convention, St. Petersburg, 1937. Program chairman, James A. Stinson, St. Petersburg.

Idaho midwinter meeting, Twin Falls, 1936.

Indiana state convention, Hotel Lincoln, Indianapolis, October 7, 8. Program chairman, Paul van B. Allen, Indianapolis.

Kansas state convention, Larned, October 11-13. Program chairman, Lawton M. Hanna, Clay Center.

Kentucky state convention, Brown Hotel, Louisville, October 29, 30. Program chairman, O. C. Robertson, Owensboro.

Middle Atlantic States convention, Richmond, Va.

Minnesota state convention, St. Paul, May 7 and 8, 1937. Program chairman, E. S. Powell, St. Paul.

Missouri state convention, Hotel Statler, St. Louis, October 16-18. Program chairman, Collin Brooke, St. Louis.

Montana state convention, Miles City, September 6-9. Program chairmen, F. L. Anderson and J. R. Mathis, both of Miles City.

Nebraska state convention, Hotel Fontenelle, Omaha, September 21-23. Program chairman, P. F. Kani, Omaha.

New Hampshire state convention, Portsmouth, 1937.

New Jersey state fall meeting, Atlantic City, September 19.

New York state convention, Niagara Falls, October.

North Carolina state convention, Burlington, May 29, 1937. Program chairman, G. E. Holt, Burlington.

Oregon midwinter meeting, Portland.

Rocky Mountain Conference, Estes Park, August 30-September 2.

Tennessee state convention, Hotel Peabody, Memphis, October 26, 27. Program chairman, W. L. Baker, Memphis.

Texas state convention, Houston, May, 1937. Program chairman, Reginald Platt, Jr., Houston.

Utah state convention, Salt Lake City, June, 1937.

Vermont state convention, Montpelier, October 7, 8. Program chairman, H. I. Slocum, Middlebury.

West Virginia state convention, Elkins, June, 1937. Program chairman, Harry E. McNeish, Elkins.

Wisconsin fall meeting, Portage, October. State convention, Milwaukee, May, 1937. Program chairman, Paul Koogler, Hustisford.

Official and Affiliated Organizations

CALIFORNIA

State Association

The program was reported in THE JOURNAL for June. The following officers were elected on June 25: President, Ralph W. Rice, Los Angeles; vice president, Walter W. Hopps, Jr., Los Angeles; secretary-treasurer, C. B. Rowlingson, Los Angeles, reelected; trustee, E. B. Houghtaling, San Diego.

Oakland Osteopathic Luncheon Club

A meeting was held on July 7.

San Diego Branch

The officers were reported in THE JOURNAL for July. The following committee chairmen have been appointed: Membership, H. P. Foley; professional education, George K. Axtell; hospitals, T. Kenneth Burton; censorship, L. Q. Dyer; student recruiting, W. M. Knudtson; public health and education, E. B. Houghtaling; clinics, Sam Laughton; publicity and statistics, Carl S. Stillman; convention program, Vera George; convention arrangements, Gwladys Morgan Lyle; legislation, E. J. Shackleford; professional development, L. W. Noble; displays at fairs and expositions, E. N. Morgan, all of San Diego; industrial and institutional service, R. E. Fiala, El Cajon.

COLORADO

State Association

At a meeting held on June 20, the following officers were elected: President, Rodney Wren, Pueblo, reelected; vice president, Philip A. Witt, Denver; secretary-treasurer, C. Robert Starks, Denver, reelected; trustees for three years, W. R. Benson, Longmont, and Dr. Witt.

DISTRICT OF COLUMBIA

District Association

A meeting was held on June 23. Felix D. Swope, Washington, D. C., spoke on "Proctology in General Practice."

IDAHO

Boise Valley Osteopathic Society

The officers were reported in THE JOURNAL for July. The following committee chairmen have been appointed: Membership and publicity, Sol Catron, Payette; professional education, Harriet Sears, Ontario, Oregon; hospitals and professional development, Earl Warner, Caldwell; censorship, Howard B. Catron, Payette; student recruiting, Robert E. Cochran, Boise; public health and education, Anna B. Pritchett, Vale, Oregon; industrial and institutional service, C. R. Whittenberger, Caldwell; clinics, O. R. Meredith, Nampa; statistics, E. C. Hiatt, Weiser; convention program and arrangements, F. H. Thurston, Boise; legislation, L. D. Anderson, Boise; displays at fairs and expositions, A. W. Bowbrick, Emmett.

ILLINOIS

Tri-City Osteopathic Association

(See Iowa—circuit meeting.)

Eighth District Illinois Osteopathic Association

The following officers were elected recently: President, J. G. Switzer, Vandalia, reelected; vice president, P. E. Sutton, Olney, reelected; secretary-treasurer, C. O. Jayne, Centralia; state chairman, membership committee, H. D. Norris, Marion; district chairman, membership committee, W. A. Wood, Centralia; legislation (trustee of state association), Dr. Jayne.

INDIANA

First District Indiana Osteopathic Association

The following officers were elected on June 18: President, Paul van B. Allen, Indianapolis; vice president, K. T. Vyverberg, LaFayette; secretary-treasurer, F. E. Warner, Bloomington.

IOWA

Circuit Meeting

Circuit meetings were held as follows: June 21, Third District, Hotel Ottumwa, Ottumwa; June 22, Tri-City and First District, Davenport; June 23, Sixth District, Hotel Savery, Des Moines; June 24, Fourth District, Algona; June 25, Fifth District, Jackson Hotel, Sioux City; June 26, Second District, Atlantic.

The circuit speakers were: John M. Woods, Des Moines, who spoke on "The Osteopathic Armamentarium," and Yale Castlio, Kansas City, Mo., who talked on "Posture," illustrating his talk with x-ray films.

KANSAS

Arkansas Valley Society of Osteopathic Physicians and Surgeons

J. H. Earnshaw, Dodge City, reports that a meeting was held on June 25 at Jetmore. Frank E. Loose, Lewis, read a paper on the diagnosis and treatment of "Herpes Zoster," which was followed by a general discussion. The film, "Osteopathic Mechanics of the Pelvis," was shown.

South Central Kansas Osteopathic Society

A picnic was held on June 18 at Shady Rest. The Wichita Osteopathic Society and the nurses and interns of the Southwestern Osteopathic Hospital were guests.

Wichita Osteopathic Society

(See South Central Kansas Osteopathic Society.)

LOUISIANA

Southwest Louisiana Osteopathic Association

A. E. Stanton, Crowley, reports that a meeting was held on June 20 at Lafayette. Dr. Stanton read a scientific paper and W. Luther Stewart, Alexandria, reported on the Texas osteopathic state convention.

The following officers were elected: President, James R. Kidwell, Baton Rouge; vice president, Carl E. Warden, Lake Charles; secretary-treasurer, Dr. Stanton.

MICHIGAN

Oakland County Osteopathic Association

A joint meeting with the Oakland County Osteopathic Women's Club was held on June 18 at Pontiac. Plans were made for the annual picnic to be held in August at Watkins Lake.

Southwestern Michigan Osteopathic Association

A meeting was held on June 24 at Sturgis. S. V. Robuck, Chicago, spoke on "Osteopathic Pathology and Technic."

MISSOURI

Marion County Osteopathic Association

A meeting was held on July 2 at Hannibal. W. C. Beaven, Hannibal, spoke on "Intestinal Toxemia."

St. Louis Osteopathic Association

Paul F. McRae, St. Louis, reports that a meeting was held on July 12. W. A. Ellis, St. Louis, talked on "Feet, Posture, and Disease" and a representative of the Research Department of the Musebeck Shoe Company lectured on "Anatomy of the Foot and Posture," illustrating the talk with slides.

The following officers have recently been elected: President, J. Lincoln Hirst; vice president, E. E. Farley; secretary-treasurer, Dr. McRae, reelected, all of St. Louis; trustee, L. G. Sturmer, Maplewood.

NEW JERSEY

Union County Osteopathic Society

The following officers have recently been elected: President, Vernon F. Still, Elizabeth; vice president, Frank Miller, New Brunswick; secretary-treasurer, Gordon L. Peters, Cranford.

OHIO

Stark County Osteopathic Society

The following officers were elected recently: President, Mark A. Bauer, Canton; vice president, M. C. Kropf, Orrville; secretary-treasurer, Joseph Rader, Massillon.

Third (Akron) District Osteopathic Society

The officers were reported in THE JOURNAL for May. The following committee chairmen have been appointed: Membership, J. J. Mahannah, Warren; professional education, Charlotte Weaton, Massillon; hospitals, Arthur L. Harbarger, Akron; censorship, Arthur E. Smith, Youngstown; student recruiting, Edwin C. White, Warren; public health and education, L. E. Sowers, Warren; industrial and institutional service, E. L. Jay, Akron; clinics, Harry S. Gaskeen, Youngstown; publicity, Lillian Anderson, Akron; statistics, Maurice C. Kropf, Orrville; legislation, H. L. Samblanet, Canton; professional development, N. A. Ulrich, Kent.

OKLAHOMA

Oklahoma County Osteopathic Association

A dinner meeting was held on June 16 to honor the young physicians who took the recent state board examination.

The following are the present officers: President, C. F. Stauber; vice president, Paul A. Harris; secretary-treasurer, R. B. MacDowell, all of Oklahoma City. Dr. Harris is also chairman of the membership committee.

South-Central District of Oklahoma Osteopathic Association

A meeting was held on June 23 at Norman. J. Paul Price and F. A. Englehart, both of Oklahoma City, were the principal speakers.

OREGON

State Association

The following officers were reelected on June 20: President, W. W. Howard, Medford; vice president, I. J. Neher, Portland; secretary-treasurer, J. A. van Brakle, Portland. F. S. Richards, Forest Grove, was appointed a trustee.

RHODE ISLAND

Newport County Osteopathic Society

The officers were reported in THE JOURNAL for July. The following committee chairmen have been appointed: Membership, J. Allan Sweet; hospitals, R. J. Dowling and C. D. Hulett; public health and education, and industrial and institutional service, Dr. Dowling; clinics, Charles D. Hulett and Frederick Dannan; statistics, John H. Finn; legislation, R. J. Dowling and J. H. Finn, all of Newport.

SOUTH CAROLINA

State Association

The officers were reported in THE JOURNAL for July. The following committee chairmen have been appointed: Professional education, Hallie Stubblefield, Greenville; censorship, Maude Tupper, Aiken; student recruiting, Joanna Barnes, Ridge Spring; public health and education, M. L. Bonham, Anderson; industrial and institutional service, Walter Hale, Spartanburg; clinics, Lewellys C. Johnson, Greenville; publicity, Nancy Hoselton, Columbia; statistics, Frank Landrum, Florence; convention program and arrangements, Nancy Hoselton; legislation, E. W. Pratt, Charleston.

SOUTH DAKOTA

State Association

The annual convention of the South Dakota Osteopathic Association was held on June 22 and 23 at the Franklin Hotel, Deadwood. The following scientific program was presented: June 22—"Presidential Address," P. W. Wasner, Deadwood; "Short Wave Diathermy," Mr. D. R. Begley, Fort Meade, radio technician; "Foot Technic," D. D. Olsen, Hot Springs; "Thyroid Gland," Howard Lamb, Denver; "Asthma and Hay Fever," Laurence S. Betts, Huron; general discussion. June 23—"Proctology," F. L. Anderson, Miles City, Mont.; "Surgical Clinics," F. L. Anderson; general discussion. C. Steele Betts, Huron, also spoke.

The following officers were elected on June 23: President, J. Lynne O'Neill, Mitchell; vice president, F. E. Burkholder, Sioux Falls; secretary-treasurer, Benedicta M. Lewis, Pierre, reelected; trustees, T. H. Hoard, Beresford, H. H. Cook, Rapid City, J. L. Porter, Pukwana. The following committee chairmen have been appointed: Membership, W. G. Rosencrans, Vermillion; professional education, L. E. Anderson, Buffalo; hospitals, G. R. Caldwell, Webster; censorship, C. Rebekka Strom, Sioux Falls; student recruiting, J. Gordon Betts, Spearfish; public health and education, M. O. Fuerst, Sturgis; industrial and institutional service and publicity, Lawrence S. Betts, Huron; clinics, C. E. Schoolcraft, Watertown; convention program and arrangements, J. H. Cheney, Sioux Falls; legislation, C. S. Betts, Huron, and J. H. Cheney, Sioux Falls.

TEXAS

State Association

The officers were reported in THE JOURNAL for July. The following committee chairmen have been appointed: Student recruiting, Louis H. Logan, Dallas; public health and education, H. E. Roberts, Denton; industrial and institutional service and clinics, Sam F. Sparks, Dallas; publicity, Sam L. Scothorn, Dallas; convention program, Reginald Platt, Jr., Houston; convention arrangements, William Bailey, Houston; legislation, Everett W. Wilson, San Antonio.

Panhandle Osteopathic Society

A meeting was held on July 6. Edward S. Merrill and James M. Watson, both of Los Angeles, were the principal speakers.

UTAH

State Association

Pearl Nelson, Salt Lake City, was appointed publicity chairman. The other officers were reported in THE JOURNAL for July.

WASHINGTON

State Association

The officers were reported in THE JOURNAL for July. The following committee chairmen have been appointed: Membership, J. H. Hook, Tacoma; professional education, E. A. Archer, Pullman; hospitals, W. E. Waldo, Seattle; censorship, W. J. Siemens, Seattle; student recruiting, Howard F. Kale, Seattle; public health and education, C. A. Hughes, Sunnyside; industrial and institutional service, H. V. Hoover, Tacoma; clinics, H. L. Chadwick, Spokane; publicity, C. E. Abegglen, Walla Walla; legislation, M. R. Kint, Bremerton; professional development, E. W. Myers, Forks; displays at fairs and expositions, E. D. Mosier, Puyallup; editor, S. M. Pugh, Everett.

Walla Walla Valley Osteopathic Society

The following officers were elected on June 18: President, G. W. Epley, Pasco; secretary-treasurer, R. C. Mayo, Walla Walla.

WEST VIRGINIA

Ohio Valley Osteopathic Association

A meeting was held on June 25 at Wellsburg. W. M. Reese, Wheeling, was the principal speaker.

WISCONSIN

Northwest District Osteopathic Association

The following officers have recently been elected: President, J. H. Paul, Eau Claire; vice president, Wilfred W. Mittelstadt, Stevens Point; secretary-treasurer, W. L. Madson, Rhinelander.

Special and Specialty Groups

New England Osteopathic Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, Mark Tordoff, Providence, R. I.; publicity, Ralph G. Beverly, Keene, N. H.; convention program, Perrin T. Wilson, Cambridge, Mass.; convention arrangements, William T. Knowles, Boston, Mass.

Rocky Mountain Osteopathic Conference

The annual Rocky Mountain Osteopathic Conference will be held at Estes Park, Colo., on August 30, 31, and September 1 and 2. Meetings will be held mornings and evenings, each afternoon being devoted to sightseeing. The following program will be presented:

August 30—"Applied Anatomy of the Shoulder," a demonstration on "Clavicle Technics; Upper Rib Technics" and "Osteopathic Diagnosis," a demonstration on "Upper Dorsal Technics," James A. Stinson and J. Brayton Cahill, both of St. Petersburg, Fla.; "Ante Partum Care" and "The Management of Normal Labor," Ernest G. Bashor, Los Angeles; "Vegetative Nervous System," and "Nervous Physiology as Related to the Osteopathic Physician," Wallace M. Pearson, Kirksville, Mo.

August 31—"The Histogenesis of Supporting Skeletal Structure," Dr. Stinson; "Clinical Detection of the Osteopathic Lesion with X-Ray Studies," and "An Application of Technic to These Points," Dr. Pearson; "Post Partum Care," and "Operation Deliveries," Dr. Bashor; "Low Back Problems," with a demonstration on "Two Man Technic," Drs. Stinson and Cahill.

September 1—"Diagnosis and Treatment of the More Common Appendicular Joint Pathologies," Dr. Stinson; "Application of the Osteopathic Principle to Treatment of Influenza, Pneumonia, and the Manifestation of Disease in the Patient," and "Osteopathic Lesion Pathology," Dr. Pearson; "Gynecological Diagnosis—An Osteopathic Viewpoint," and "Osteopathic Concept of Uterine Displacements," Dr. Bashor; demonstration "Knee and Elbow Technics," Dr. Cahill.

September 2—"Sterility," and "The Menopause in Osteopathic Therapy," Dr. Bashor; "Technical Effect of Manipulative Treatment," and "Osteopathy as Advanced Medical Treatment," Dr. Pearson; "Applied Anatomy of the Foot," illustrated by a film, Dr. Stinson; demonstration, "Dr. Still's Foot Technic," Drs. Stinson and Cahill.

Reserve speakers: "Field Study in Refraction," H. M. Ireland; "Status and Need of Osteopathic Clinic Service," H. I. Magoun; "Hypoadrenia From Fallen Kidneys," P. A. Witt; "Graduate Study in Osteopathic Education," C. C. Reid; "Fever Therapy," F. I. Furry, all of Denver.

Western Osteopathic Association

R. N. MacBain, Chicago, was the featured speaker on the western circuit, which included the Idaho Osteopathic Association convention at Idaho Falls, June 12 and 13, the Washington Osteopathic Association convention at Walla Walla, June 15 to 17, and the Oregon Osteopathic Association convention at Medford, June 19 and 20. (See THE JOURNAL for July for the programs.)

Maintain Interest

Do not allow your patients to forget you. Summer cultivation will produce fall patients. Begin **now** to build your fall practice.

Osteopathic Magazine for September

Osteopathy and Infectious Disease. By Ray G. Hulburt, D.O.

The story in brief of Dr. Still's early studies to arrive at his theory of natural immunity, and its significance in the art of healing.

Humpty Dumpty Had a Great Fall. By S. V. Robuck, D.O.

A straightforward presentation of osteopathy's particular concern in discovering and correcting the delayed results of childhood accidents, with particular reference to nocturnal enuresis.

This Business of Being a Mother. By Marion Howe Wilder, D.O.

A mother presents in the spirit of a business discussion some of the commoner problems of child training and her methods of handling them.

For and Against Apron Strings

An informal discussion of the two sides of a question which has much to do with a child's physical and mental growth, and which makes the middle road seem preferable.

The Late Summer Sneeze. By Elizabeth Fraser.

A doctor explains to a hay fever sufferer the nature of the osteopathic treatment for this discomforting condition.

These Puzzling Youngsters. By Vincent P. Carroll, D.O.

The story of a child whose behavior was conditioned by an emotional shock sustained early in life, traced back to its causes.

Osteopathy a Learned Profession. By Charles Hazzard, D.O.

The development of osteopathy from a theory to a profession, including mention of its schools and hospitals, its geographical distribution, its widening sphere, its therapeutic efficacy, its record of achievement.

Osteopathic Health No. 81 (Sept.)

Osteopathy and Disease Prevention

Management of Heart Disease

Back Injuries in Industry

Preparing the Athlete

I think the last issue of OSTEOPATHIC MAGAZINE is about as good a practice stimulant that I have seen in a long time.

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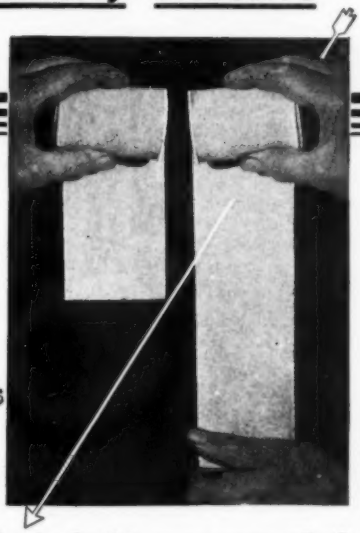

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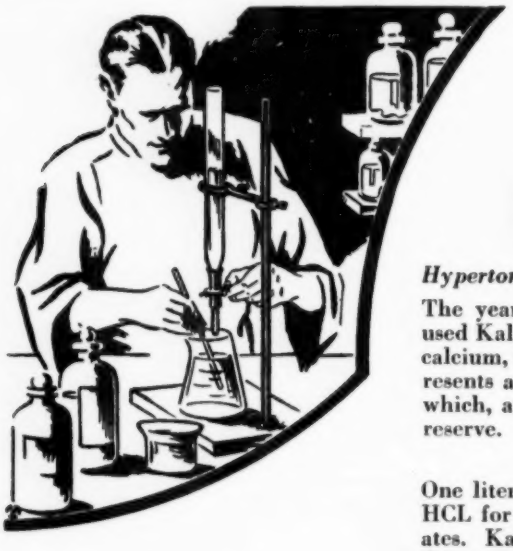

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